

SAC's



110 Best of
the NGC

by Paul Dickson

Version: 1.4 — March 26, 1997

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After Observing the Messier Catalog, Try this Observing List:

SAC's

110 Best of the NGC

by Paul Dickson

dickson@primenet.com

<http://www.seds.org/pub/info/newsletters/sacnews/html/sac.110.best.ngc.html>

SAC's 110 Best of the NGC is an observing list of some of the best objects after those in the Messier Catalog. This book is 124-pages, three-ring drilled. It has information about each object including the NGC description and page numbers from other references (e.g. Burnham's and others). The objects are sorted numerically by constellation and there is an index in the back of the book. Each object is in a small finder chart, 6 degrees on a side, with a Telrad circle. The back of this sheet has four pages taken from the book.

Permission is granted to copy this page (front and back) so you can give copies to your friends.

SAC is the Saguaro Astronomy Club. Other projects from the club include the SAC Deep-Sky Database and the SAC Double-Star Database, each with more than 10,000 objects.

SAC's 110 Best of the NGC is available for \$5. Shipping and handling is \$4 for the first copy, \$2 for each additional copy. For orders of 5 books or more, shipping and handling is \$2 for each copy. For outside of North America, please write or send E-mail for the shipping rate.

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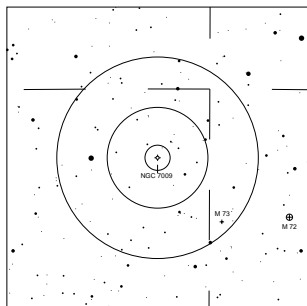
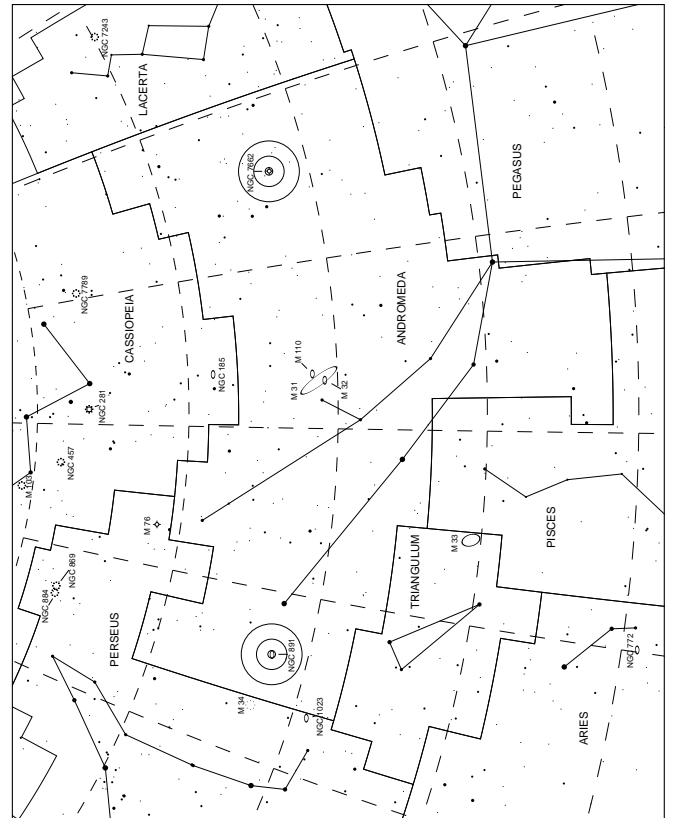
City: _____ State: _____ ZIP Code: _____

SAC's



110 Best of the NGC

by Paul Dickson
Version: 1.4 — February 5, 1997
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NGC 7009

Type R.A. (2000) Dec Mag. Size
PN 21h04.2m -11°22' 8.3 28"x23"

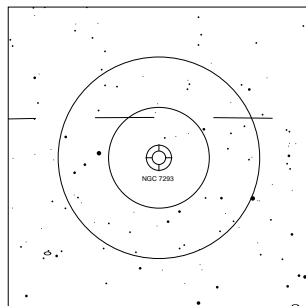
NGC 7009, PK37-34.1, Saturn Nebula,
H IV 1, C 55

A Herschel 400 Object

Small green oval

U2000 chart: 300, Tirion chart: 16, H-B Astroatlas: B6, C41. NGC Description: !!! vB, S, elliptic. SAC DB Notes: bright blue-green disk. Burnham's: pp. 169, 190-2. Luginbuhl & Skiff: p. 25. Deep Space CCD Atlas: North p. 230.

Personal Notes:



NGC 7293

Type R.A. (2000) Dec Mag. Size
PN 22h29.6m -20°48' 6.3 960"x720"

NGC 7293, PK36-57.1, Helical Nebula, C 63

Large, diffuse

U2000 chart: 347, Tirion chart: 23, H-B Astroatlas: B4, C58. NGC Description: l, pF, vL, E or bN. SAC DB Notes: low surf brightness. Burnham's: pp. 170, 192-6. Luginbuhl & Skiff: p. 26. Deep Space CCD Atlas: North p. 244. South p. 135.

Personal Notes:

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Messier Logbook

By Paul Dickson

dickson@primenet.com

<http://www.seds.org/pub/info/newsletters/sacnews/html/>

The *Messier Logbook* is an observing tool to help observe all 110 Messier objects. The book is 188-pages and has one Messier object per page, with finder charts tht are direct view and mirror-reversed. For each object, there is information about each object including the NGC description, page numbers from other references (e.g. Burnham's and others,) and circles for drawing each object. The objects are sorted numerically by constellation and there is an index in the back that cross-references each object. On the back of this page are the cover and three pages from the book. The book is \$20 plus \$3 shipping and handling.

Permission is granted to copy this page (front and back) to give copies to your friends.

Also available is the book *SAC's 110 Best of the NGC*. This book is similar to the *Messier Logbook*, but it has at least two objects per page. All money raised in the sale of the *SAC's 110 Best of the NGC* goes to the Saguaro Astronomy Club. This book is \$5 plus \$4 shipping for the first book and \$2 each additional book. If a copy of the *Messier Logbook* is purchased at the same time, shipping for the first book is also \$2.

As a bonus, when you purchase a copy of the *Messier Logbook* and a copy of *SAC's 110 Best of the NGC* in the same order, you get \$2 off the total price. So for each pair of books purchased it is \$23 plus \$5 shipping and handling. This offer is not transferable to other orders.

Please Make Checks Payable to:

Mail To:

Paul Dickson

**Paul Dickson
7714 N 36th Ave
Phoenix, AZ 85051-6401**

<i>Messier Logbook & SAC's 110 Best of the NGC</i>	\$23 + \$5	___ x \$28 =	_____
<i>Messier Logbook</i>	\$20 + \$3	___ x \$23 =	_____
<i>SAC's 110 Best of the NGC</i>	\$5 + \$2	___ x \$7 =	_____
If no Messier books purchased and less than 5 SAC books	+ \$2	\$2 =	_____

Total: _____

Your Astronomy Club's Name: _____

How you found out about this book: _____

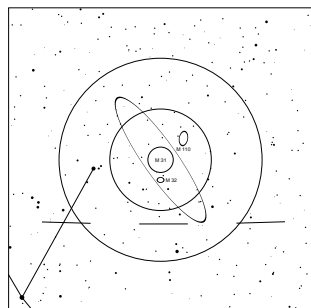
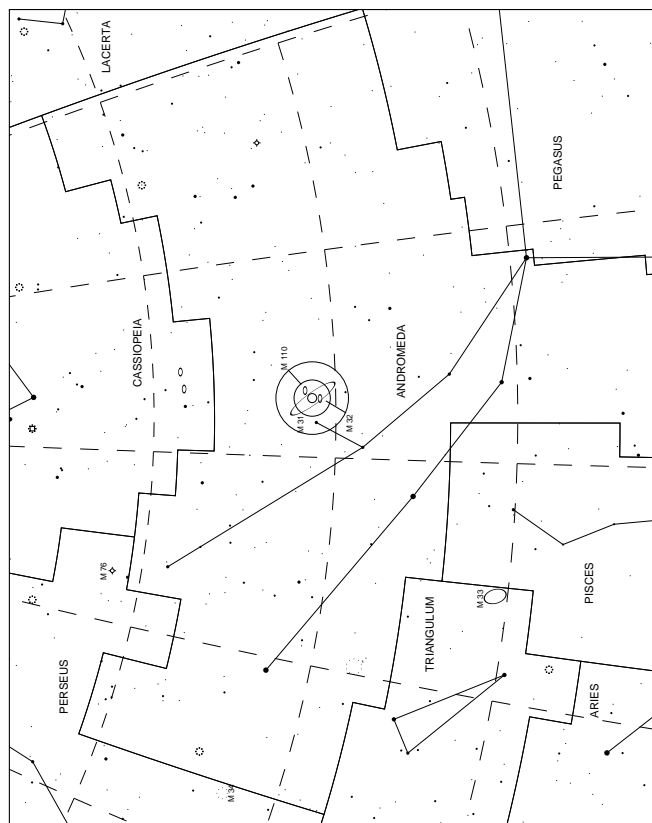
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The Messier Logbook

by Paul Dickson
Version: 1.2 — November 8, 1997
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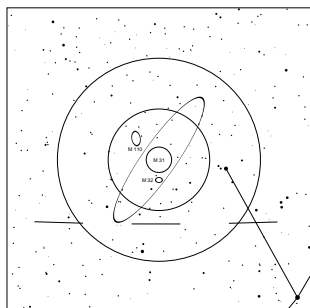
M 31

Type R.A. (2000) Dec Mag. Size PA
Sb 00h42.8m +41°16' 3.4 178'x40' 35°

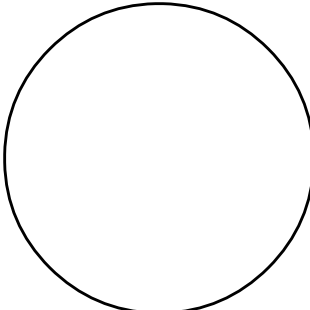
M 31, NGC 224, Andromeda Galaxy, UGC 454

U2000 chart: 60. Tirion chart: 4. H-B AstroAtlas: B3, C38. NGC Description: !!!eeB, eL, vmE, SAC
DB Notes: Local group, nearest spiral. Burnham's: pp. 110, 129-30, 130p, 132-134p, 138p, 140p. Luginbuhl & Skiff: pp. 16-18, 17p. Deep Space CCD Atlas: North p. 7.

Personal Notes:



M 31 Mirror-Reversed



___ Labeled Directions
Eyepiece: _____ Telescope: _____
Brand _____ Type _____
Focal Length _____ Aperture _____
Filters _____ Focal Length _____
f-Ratio _____
System Info: _____ True FoV _____
Power _____
Drawing Session: _____ Start Time _____ End Time _____
Limiting Magnitude: _____ Field: _____ Count: _____

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SAC's



110 Best of
the NGC

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dickson@primenet.com

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Preface

It took me 18 months to observe and log all one hundred and ten objects in the Messier Catalog. I could have done it much quicker since I observed ALL the objects in only four nights. I expect this observing list will take much longer. These objects are more difficult to find, and I have already spent three nights of the Messier list on this list too.

I put these charts together to help locate each object on SAC's 110 Best of the NGC. By the time I completed them, I had already observed 11 objects. I figured why not complete the list.

After I was done with the charts, I started showing it around. While all of the comments were positive, even enthusiastic, there were little things that still needed to be included. After I included references to Burnham's, Brian Skiff's book was suggested as well as the notes from the SAC Deep-Sky Database. If you eventually read this, I've either said enough was enough, or I've even included the kitchen sink.

—Paul Dickson
March 10, 1996

Not surprisingly, this book makes these objects easy to find. In the course of three nights during the Fall of 1996, I observed and took notes for nearly 60 objects. I only had to take out my copy of the Herold-Bobroff Astroatlas for a handful of planetary nebulae. Of course the ease I had at finding these objects just means I've had a lot of experience with these charts and some really dark skies.

During the 1997 Arizona Messier Marathon, I observed my remaining objects. Now I need to finish the Herschel 400 book.

—Paul Dickson
March 25, 1997

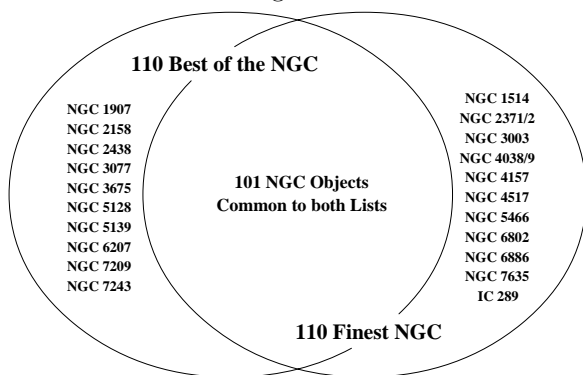
Introduction to the 110 Best of the NGC

After observing the 110 objects in the Messier Catalog, there aren't many organized observing lists available. With so many objects to choose from, if you just select NGC objects at random, it can be a long time before you can compare observations with others. On the other hand, with a prepared observing list, you and your friends can dedicate your time to common objects.

110 Best of the NGC

This is the intent of the Saguaro Astronomy Club's (SAC) Deep-Sky Group's "110 Best of the NGC." After club members have finished the Messier Catalog, this second list gives members a new "bite-size" challenge.

While SAC's 110 Best of the NGC is fairly unique to SAC, it's derived from another work. Published each year in the Royal Astronomical Society of Canada's **Observer's Handbook** is a list called the "110 Finest NGC Objects." This list differs from the SAC list for two reasons, one is the more southern locale of Arizona and the other is due to club members' bias as to which objects are considered the "best." In all, 11 objects were removed from "110 Finest NGC Objects," one was split into two objects, and 10 different objects were added. The split object was the Veil Nebula in Cygnus. Since both parts of the Veil are so far apart—more than two degrees—splitting it makes sense. Similar, newer, observing lists like the Caldwell Catalog do the same thing too. More about the Caldwell Catalog in a moment.



Although this observing list is the "110 Best of the NGC", it actually contains 112 NGC objects. This is due to some objects having more than one NGC number. The two objects in this list with two numbers are the Double Cluster and the Siamese Twins.

In the December 1995 issue of *Sky & Telescope*, there was a new observing list published called the Caldwell Catalog. The rationale of the list is similar to that of the "110 Best of the NGC", to provide an observing list for

after the Messier Catalog. With this common objective, it is not surprising that there are 33 objects in common between the two lists. But the Caldwell Catalog has a slight problem with it, not all objects are visible from North America. In fact, only about 84 objects are visible from Arizona. After viewing the "110 Best of the NGC", the Caldwell Catalog only gives you 51 additional objects to view.

Saguaro Astronomy Club

The Saguaro (sa-WAR-oh) Astronomy Club is an amateur astronomy club founded in 1977. It is located in Phoenix, Arizona, USA. The club sponsors at least three public star parties each year and even more private star parties at schools. The club also sponsors the Arizona Messier Marathon during March or April New Moon and the Sentinel Star Gaze on the next New Moon. In the past, SAC has also been a sponsor of the All-Arizona Star Party that takes place each fall.

SAC's Deep-Sky Group, in promoting Deep-Sky observing, has several observing projects, each with their own awards. The projects are: the Messier Catalog, the 110 Best of the NGC, the 110 Best Double Stars, the Herschel 400, and the 1000+ New Deep-Sky Objects. The last project is for each 1000 new objects seen since all the previous awards.

SAC has two computer databases maintained by club members. Each has more than 10,000 objects, enough to keep an amateur astronomer busy for a long while. The databases are: The SAC Deep-Sky Database and the SAC Double Star Database. The databases are available on various CD-ROMs as well as on-line on the Internet at:

<http://www.psiaz.com/sac/>

or

<ftp://www.seds.org/pub/astro/catalogs/SAC/>

This Book's Layout

This book is laid out in five sections. They are this introduction, a check-off list, an observing session notes area, the list of objects by constellation, and an index. Throughout the book large type is used at the bottom of each page, under each chart, in the check-off list, and the index to assist with reading at night with only a dim light. Other information is included in smaller print to allow it to fit.

By far the largest part of this book is the finder charts for all the objects. These charts are first by constellation, and within each constellation, they are sorted by NGC number. At the start of each constellation, there is a large finder chart for the entire constellation for coarse help locating each object.

After the large finder chart, the following is given for each object: A small finder chart (more about charts later), a brief summary of information about the object, the object's designation from other catalogs, the page number for information from other references, the NGC description, notes from the SAC database, and finally

space to write your own personal observations about the object.

The other names for the objects come from several other catalogs. The objects in the book are listed in the following catalogs: New General Catalog (NGC), Caldwell Catalog (C), Dunlop Catalog, Herschel Catalog (H), Perik & Kohoutek (PK), and the Uppsala General Catalog of Galaxies (UGC).

The page numbers are given for each object from the following sources: the **Uranometria 2000.0**, the **Tirion Sky Atlas**, **Burnham's Celestial Handbook**, **Observing Handbook and Catalogue of Deep-Sky Objects**, and the **Deep Space CCD Atlas**.

Since the descriptions from the NGC are included, you will need information on how to decode them. See the insert "NGC Descriptions".

Finder Charts

All of the charts in the book were created using David Chandler's program, **Deep Space** version 5.21 and 5.5. Even through the large charts are printed sideways, north

is up, which is determined by the text labels within a chart.

The charts use Telrad finder circles to help locate each object. Not everyone has a Telrad, but if you know the size of the field of view of your finder scope, you can place your scope close enough to be useful. The three concentric circles are (from inner to outer): 1/2 degrees, 2 degrees, and 4 degrees in diameter.

The large charts all vary in the number of degrees that they represent. Each is just large enough for the entire constellation. There is one large chart for each constellation except Virgo, which has two. Virgo's second large chart is the Virgo Galaxy Cluster. In the large charts, north is toward the binding of the book. Nearly all objects in the large charts have Telrad circles, but some don't. This is due to either aesthetics or a limitation of the number of Telrad circles in the software program.

The small charts for each object are 6° on each side, with one exception: NGC 3384, in Leo, has a second chart with a smaller angle (3°). There is usually one chart for each object, but the Double Cluster in Perseus and the

NGC Descriptions

The NGC descriptions are visual descriptions for each object. Most of these are from the NGC, some are from prominent amateurs. Back issues of *Deep Sky Magazine*, *Astronomy* magazine, *Sky & Telescope* magazine and **Burnham's Celestial Handbook** are used as a source of some of these descriptions. The descriptions use the abbreviations from the NGC and Burnham's. They are given below:

!	remarkable object	f	following	r	not well resolved, mottled
!!	very remarkable object	g	gradually	rr	partially resolved
am	among	iF	irregular figure	rrr	well resolved
att	attached	inv	involved	S	small
bet	between	irr	irregular	s	suddenly
B	bright	L	large	s	south
b	brighter	l	little	sc	scattered
C	compressed	mag	magnitude	susp	suspected
c	considerably	M	middle	st	star or stellar
Cl	cluster	m	much	v	very
D	double	n	north	var	variable
def	defined	N	nucleus	nf	north following
deg	degrees	neb	nebula, nebulosity	np	north preceding
diam	diameter	P w	paired with	sf	south following
dif	diffuse	p	pretty (before F,B,L or S)	sp	south preceding
E	elongated	p	preceding	11m	11th magnitude
e	extremely	P	poor	8...	8th magnitude and fainter
er	easily resolved	R	round	9...13	9th to 13th magnitude
F	faint	Ri	rich		

Here are some examples of NGC abbreviations:

	Description	Decoded Descriptions
214	pF, pS, lE, gvlbM	pretty faint, pretty small, little elongated gradually very little brighter in the middle
708	vF, vS, R	very faint, very small, round
891	B, vL, vmE	bright, very large, very much elongated
7009	!, vB, S	remarkable object, very bright, small
7089	!! B, vL, mbM, rrr	very remarkable object, bright, very large, much brighter middle, resolved, stars 13th magnitude and dimmer
2099	! B, vRi, mC	remarkable object, bright, very rich, much compressed
6643	pB,pL,E50,2 st p	pretty bright, pretty large, elongated in position angle 50 degrees, two stars preceding

The above was take from the SAC Deep-Sky Database: file sacdoc.txt.

Siamese Twins in Virgo share a chart for their NGC components.

References

- Burnham Jr., Robert, **Burnham's Celestial Handbook**, Volume I-III, 1978.
- Luginbuhl, Christian B. & Brian A. Skiff, **Observing Handbook and Catalogue of Deep-Sky Objects**, 1989.
- Royal Astronomical Society of Canada, **1996 Observer's Handbook**, 1995
- Saguaro Astronomy Club, **Saguaro Astronomy Club's Deep-Sky Database Version 6.1**, 1994
- Vickers, John C., **Deep Space CCD Atlas: North**, 1994.
- Vickers, John C. & Alexander Wassilieff, **Deep Space CCD Atlas: South**, 1994.

Special Information

SAC Deep-Sky Database:

<http://www.psiaz.com/sac/>

<ftp://www.seds.org/pub/astro/catalogs/SAC/>

John Vickers' Deep Space CCD Atlas: North and South

John C. Vickers, Back River Observatory, P.O. Box 1292, Duxbury, MA 02331, USA. Phone: (617) 934-6909. E-mail: jcvickers@aol.com

Deep Space:

<http://cyber10.csz.com:80/dschandler/>

Acknowledgments

First I'd like to thank SAC's Deep-Sky Group for maintaining this list, for without the list, this book would not exist. This observing list, the "110 Best of the NGC," was created by A.J. Crayon and Steve Coe. It was last modified on January 4, 1990.

I'd like to thank A.J. Crayon for proof reading this book and for all the helpful ideas he gave me (even if I was cursing all the extra work he caused).

I would also like to thank Steve Coe for maintaining the SAC databases and answering questions I had about some entries. It was also his suggestion that I include the info about the NGC descriptions.

I'd also like to thank Brian Skiff of Lowell Observatory who helped me with the catalogs descriptions referenced by this book.

Referenced Catalogs

New General Catalogue of Nebulae and Clusters of Stars (NGC):

The NGC was compiled and published by John L. E. Dreyer in 1888. At the time it was published, the NGC was the most complete collection of non-stellar, luminous objects.

Caldwell Catalog (C):

The Caldwell Catalog was published in the December, 1995 issue of *Sky & Telescope*. It contains 110 of the brightest objects in the sky that were not contained in the Messier Catalog. This catalog covers the entire sky, so not all objects are visible from North America.

Uppsala General Catalogue of Galaxies (UGC):

The UGC is a complete catalog of galaxies down to a limiting magnitude of 14.5 or by a lim-

iting diameter of one arc-minute. The sky coverage is limited to the northern sky down to 2.5° south. This catalog was published in 1973.

Dunlop Catalog (Dunlop):

Dunlop was an observer who made some lists of southern objects more than a hundred years ago.

Herschel Catalog (H):

Sir William Herschel was the first astronomer with a large telescope to systematically scan the sky and catalog the objects he saw. This work is the foundation for the NGC catalog.

Perek & Kohoutek Catalog (PK):

Lubos Perek and Lubos Kohoutek published their catalogue of all known planetary nebulae in 1967.

Check-Off List

Check-off each object viewed after an observing session, so you can tell at a glance how many remain.

You may wish to number or letter each object (rather than using just a check mark), to link these objects to other notes about the date, site, observing conditions, telescope and eyepieces used.

<input type="checkbox"/> NGC 40	<input type="checkbox"/> NGC 2392	<input type="checkbox"/> NGC 4244	<input type="checkbox"/> NGC 6369
<input type="checkbox"/> NGC 185	<input type="checkbox"/> NGC 2403	<input type="checkbox"/> NGC 4274	<input type="checkbox"/> NGC 6445
<input type="checkbox"/> NGC 246	<input type="checkbox"/> NGC 2438	<input type="checkbox"/> NGC 4361	<input type="checkbox"/> NGC 6503
<input type="checkbox"/> NGC 253	<input type="checkbox"/> NGC 2440	<input type="checkbox"/> NGC 4388	<input type="checkbox"/> NGC 6520
<input type="checkbox"/> NGC 281	<input type="checkbox"/> NGC 2539	<input type="checkbox"/> NGC 4414	<input type="checkbox"/> NGC 6543
<input type="checkbox"/> NGC 457	<input type="checkbox"/> NGC 2655	<input type="checkbox"/> NGC 4438	<input type="checkbox"/> NGC 6572
<input type="checkbox"/> NGC 663	<input type="checkbox"/> NGC 2683	<input type="checkbox"/> NGC 4449	<input type="checkbox"/> NGC 6633
<input type="checkbox"/> NGC 772	<input type="checkbox"/> NGC 2841	<input type="checkbox"/> NGC 4490	<input type="checkbox"/> NGC 6712
<input type="checkbox"/> NGC 869	<input type="checkbox"/> NGC 2903	<input type="checkbox"/> NGC 4494	<input type="checkbox"/> NGC 6781
<input type="checkbox"/> NGC 884	<input type="checkbox"/> NGC 3077	<input type="checkbox"/> NGC 4526	<input type="checkbox"/> NGC 6818
<input type="checkbox"/> NGC 891	<input type="checkbox"/> NGC 3079	<input type="checkbox"/> NGC 4535	<input type="checkbox"/> NGC 6819
<input type="checkbox"/> NGC 936	<input type="checkbox"/> NGC 3115	<input type="checkbox"/> NGC 4559	<input type="checkbox"/> NGC 6826
<input type="checkbox"/> NGC 1023	<input type="checkbox"/> NGC 3184	<input type="checkbox"/> NGC 4565	<input type="checkbox"/> NGC 6939
<input type="checkbox"/> NGC 1232	<input type="checkbox"/> NGC 3242	<input type="checkbox"/> NGC 4567/8	<input type="checkbox"/> NGC 6940
<input type="checkbox"/> NGC 1491	<input type="checkbox"/> NGC 3344	<input type="checkbox"/> NGC 4605	<input type="checkbox"/> NGC 6946
<input type="checkbox"/> NGC 1501	<input type="checkbox"/> NGC 3384	<input type="checkbox"/> NGC 4631	<input type="checkbox"/> NGC 6960
<input type="checkbox"/> NGC 1535	<input type="checkbox"/> NGC 3432	<input type="checkbox"/> NGC 4656	<input type="checkbox"/> NGC 6992
<input type="checkbox"/> NGC 1788	<input type="checkbox"/> NGC 3521	<input type="checkbox"/> NGC 4699	<input type="checkbox"/> NGC 7000
<input type="checkbox"/> NGC 1907	<input type="checkbox"/> NGC 3607	<input type="checkbox"/> NGC 4725	<input type="checkbox"/> NGC 7009
<input type="checkbox"/> NGC 1931	<input type="checkbox"/> NGC 3628	<input type="checkbox"/> NGC 4762	<input type="checkbox"/> NGC 7027
<input type="checkbox"/> NGC 1973	<input type="checkbox"/> NGC 3675	<input type="checkbox"/> NGC 5005	<input type="checkbox"/> NGC 7129
<input type="checkbox"/> NGC 2022	<input type="checkbox"/> NGC 3877	<input type="checkbox"/> NGC 5033	<input type="checkbox"/> NGC 7209
<input type="checkbox"/> NGC 2024	<input type="checkbox"/> NGC 3941	<input type="checkbox"/> NGC 5128	<input type="checkbox"/> NGC 7243
<input type="checkbox"/> NGC 2158	<input type="checkbox"/> NGC 4026	<input type="checkbox"/> NGC 5139	<input type="checkbox"/> NGC 7293
<input type="checkbox"/> NGC 2194	<input type="checkbox"/> NGC 4088	<input type="checkbox"/> NGC 5746	<input type="checkbox"/> NGC 7331
<input type="checkbox"/> NGC 2244	<input type="checkbox"/> NGC 4111	<input type="checkbox"/> NGC 5907	<input type="checkbox"/> NGC 7662
<input type="checkbox"/> NGC 2261	<input type="checkbox"/> NGC 4214	<input type="checkbox"/> NGC 6207	<input type="checkbox"/> NGC 7789
<input type="checkbox"/> NGC 2359	<input type="checkbox"/> NGC 4216	<input type="checkbox"/> NGC 6210	

Session Notes

Report on these pages information about each observing session (e.g. date, site, observing conditions, telescope and eyepieces used.)

Session Notes

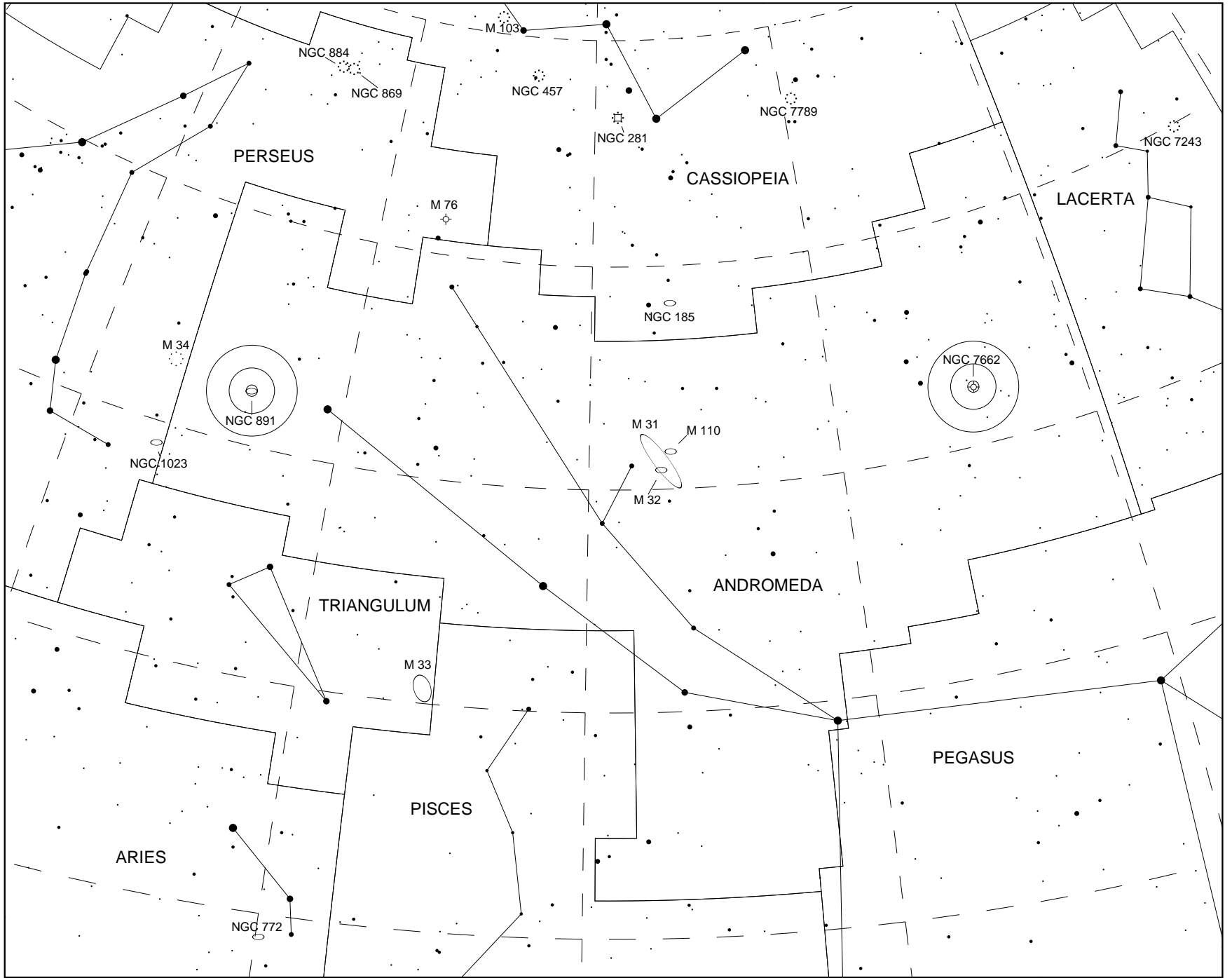
Report on these pages information about each observing session (e.g. date, site, observing conditions, telescope and eyepieces used.)

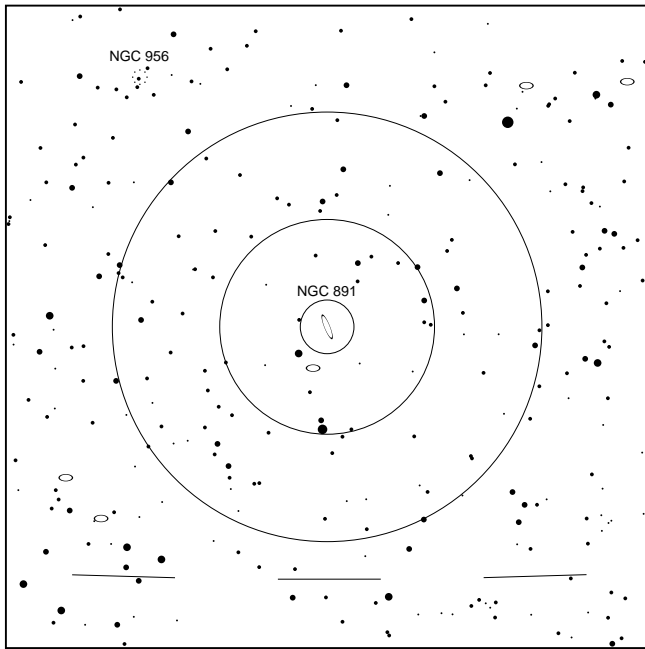
Session Notes

Report on these pages information about each observing session (e.g. date, site, observing conditions, telescope and eyepieces used.)

Session Notes

Report on these pages information about each observing session (e.g. date, site, observing conditions, telescope and eyepieces used.)





NGC 891

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	02h22.6m	+42°21'	11.5	14.0'x3.0'	22°

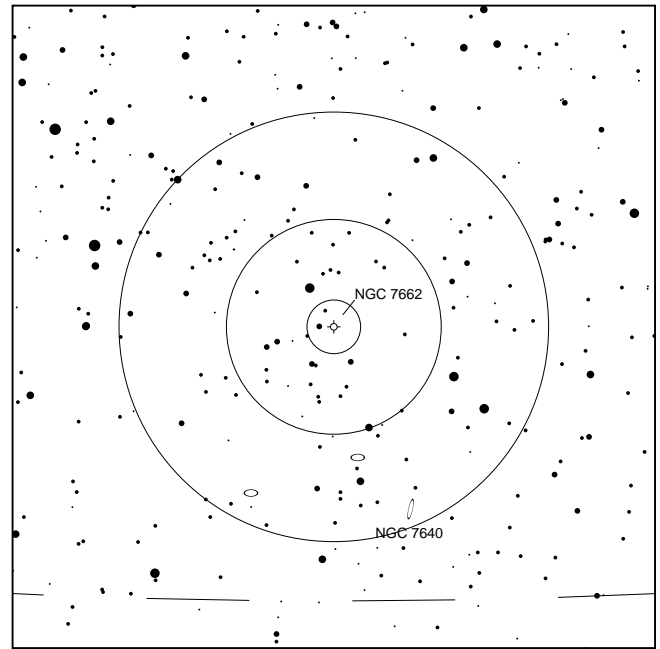
NGC 891, H V 19, C 23, UGC 1831

A Herschel 400 Object

Edge-on with dust lane

U2000 chart: 62, **Tirion chart:** 4, **H-B Astroatlas:** B13, C37, D41. **NGC Description:** B, vL, vmE22. **SAC DB Notes:** NGC 1023 group, Lord Rosse drawing shows dark lane. **Burnham's:** pp. 110, 154-6. **Luginbuhl & Skiff:** pp. 18-9. **Deep Space CCD Atlas:** North p. 25.

Personal Notes:



NGC 7662

Type	R.A. (2000)	Dec	Mag.	Size
PN	23h25.9m	+42°33'	8.6	17"x14"

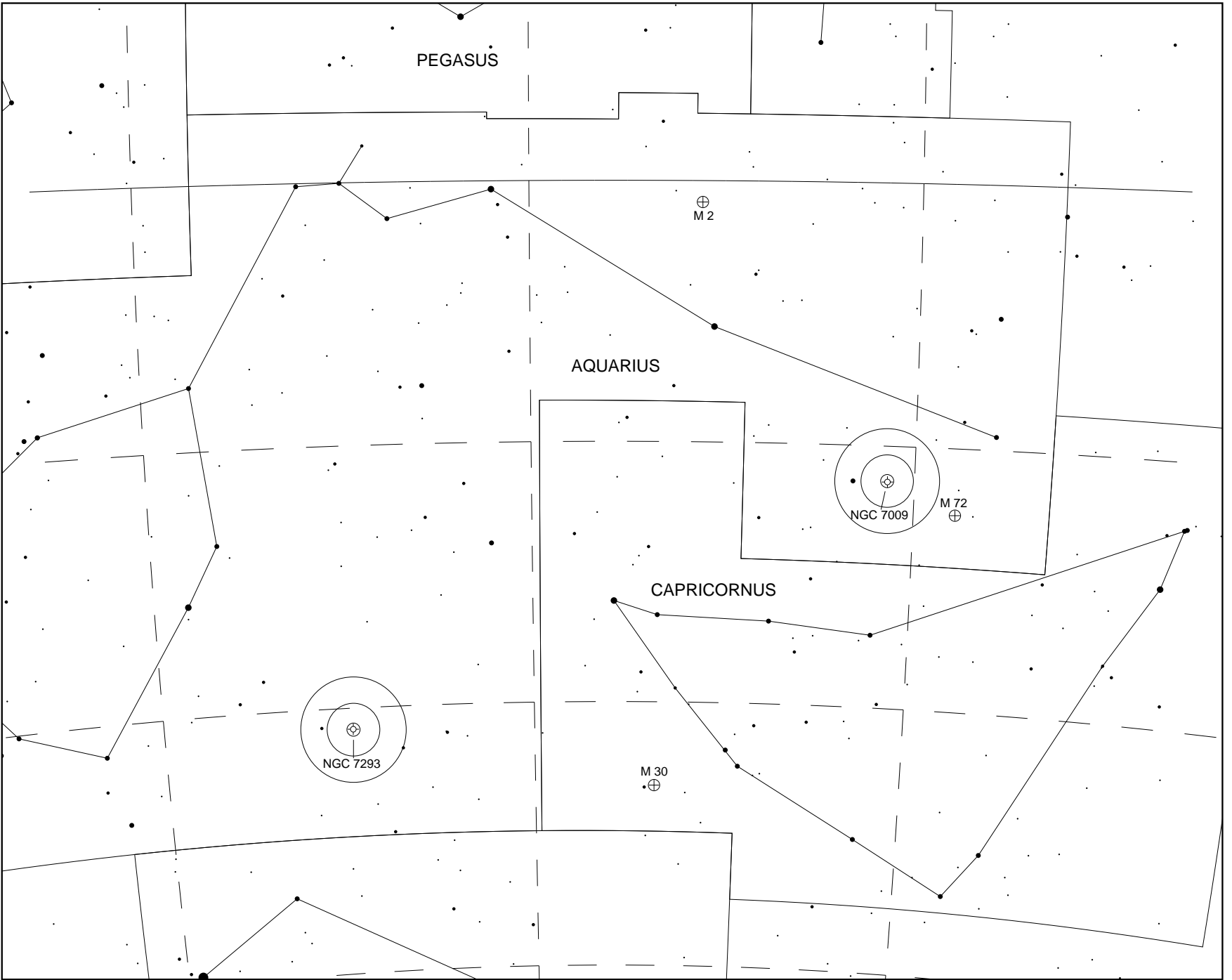
NGC 7662, PK106-17.1,
Blue Snowball Nebula, H IV 18, C 22

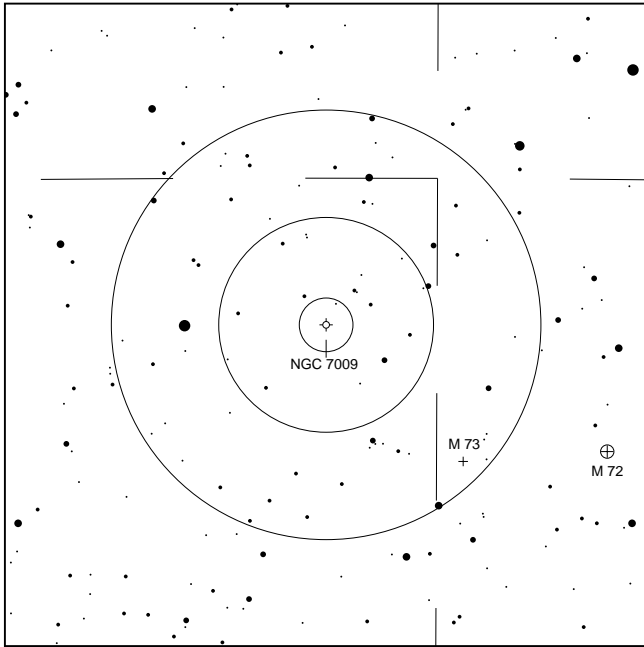
A Herschel 400 Object

Use high power for detail

U2000 chart: 88, **Tirion chart:** 9, **H-B Astroatlas:** B3, C21. **NGC Description:** !!! Planetary or annular neb, vB, pS, R, blue. **SAC DB Notes:** Barnard-cent * variable? **Burnham's:** pp. 110, 156-9. **Luginbuhl & Skiff:** pp. 19, 20. **Deep Space CCD Atlas:** North p. 252.

Personal Notes:





NGC 7009

Type	R.A. (2000)	Dec	Mag.	Size
PN	21h04.2m	-11°22'	8.3	28"x23"

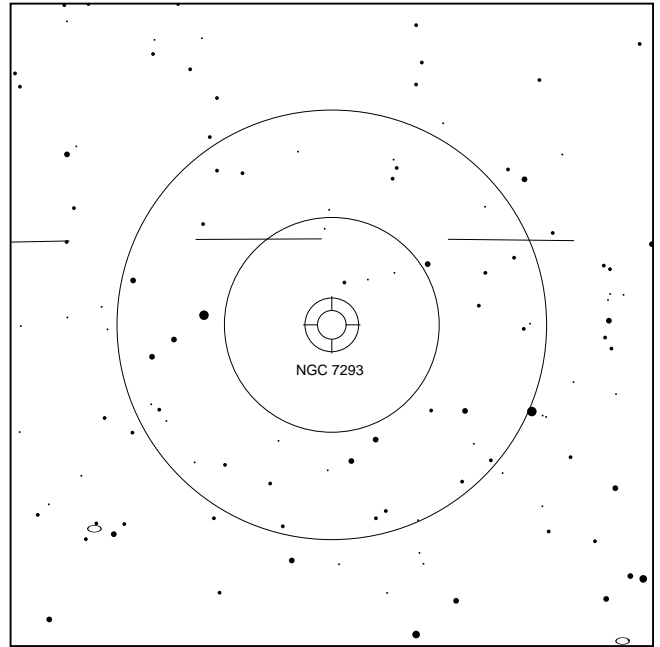
NGC 7009, PK37-34.1, Saturn Nebula, H IV 1, C 55

A Herschel 400 Object

Small green oval

U2000 chart: 300, **Tirion chart:** 16, **H-B Astroatlas:** B6, C41. **NGC Description:** !!! vB, S, elliptic. **SAC DB Notes:** bright blue-green disk. **Burnham's:** pp. 169, 190-2. **Luginbuhl & Skiff:** p. 25. **Deep Space CCD Atlas:** North p. 230.

Personal Notes:



NGC 7293

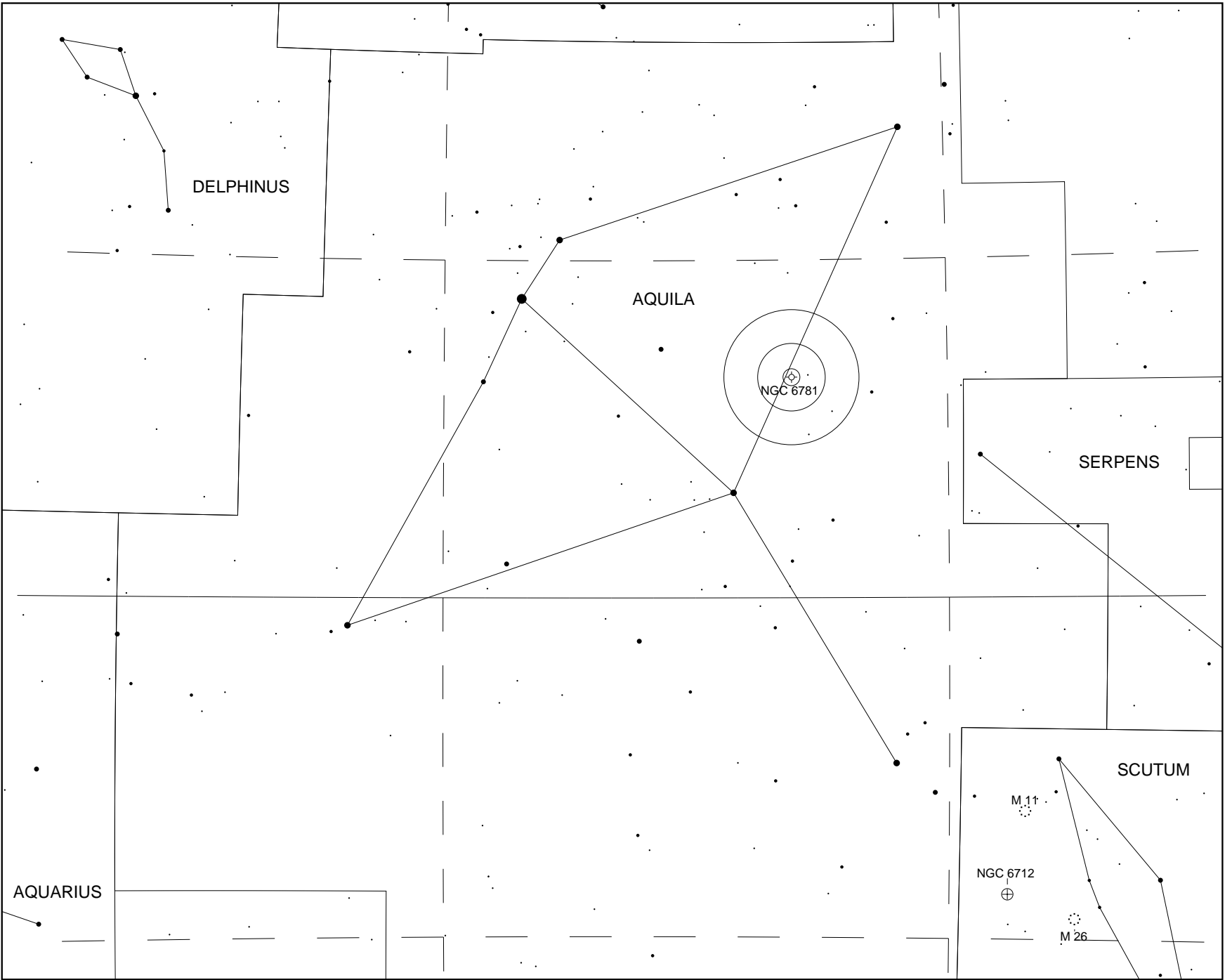
Type	R.A. (2000)	Dec	Mag.	Size
PN	22h29.6m	-20°48'	6.3	960"x720"

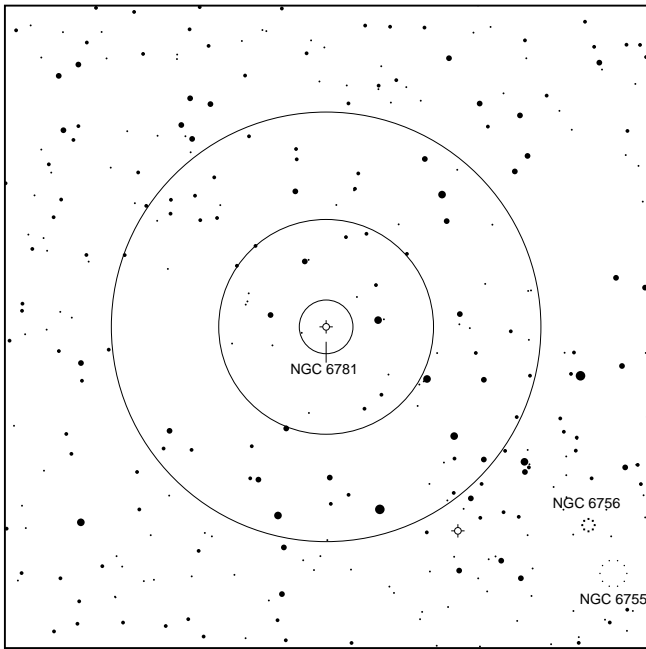
NGC 7293, PK36-57.1, Helical Nebula, C 63

Large, diffuse

U2000 chart: 347, **Tirion chart:** 23, **H-B Astroatlas:** B4, C58. **NGC Description:** !, pF, vL, E or biN. **SAC DB Notes:** low surf brightness. **Burnham's:** pp. 170, 192-6. **Luginbuhl & Skiff:** p. 26. **Deep Space CCD Atlas:** North p. 244. South p. 135.

Personal Notes:





NGC 6781

Type	R.A. (2000)	Dec	Mag.	Size
PN	19h18.5m	+06°32'	11.8	111"x109"

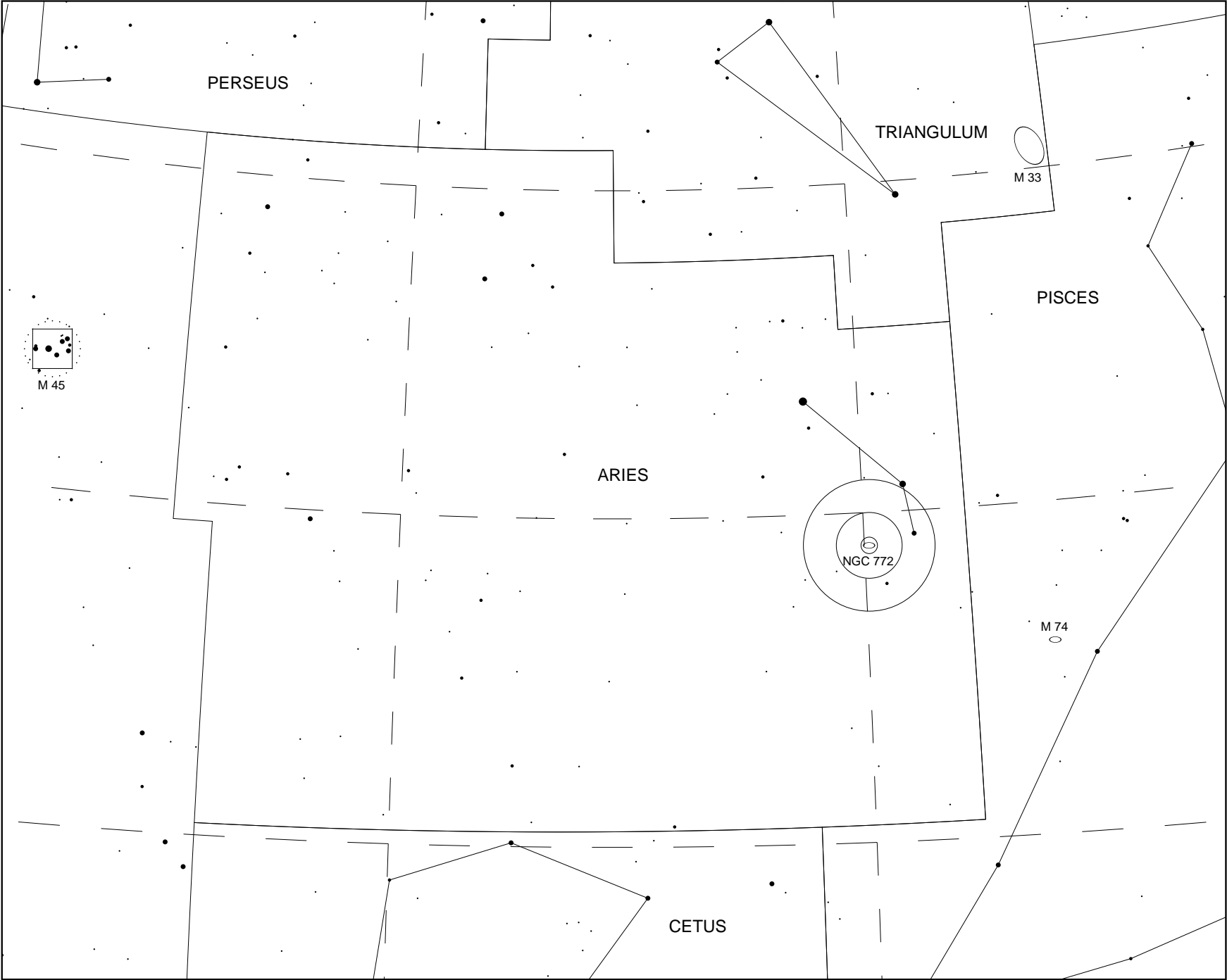
NGC 6781, H III 743, PK41-2.1

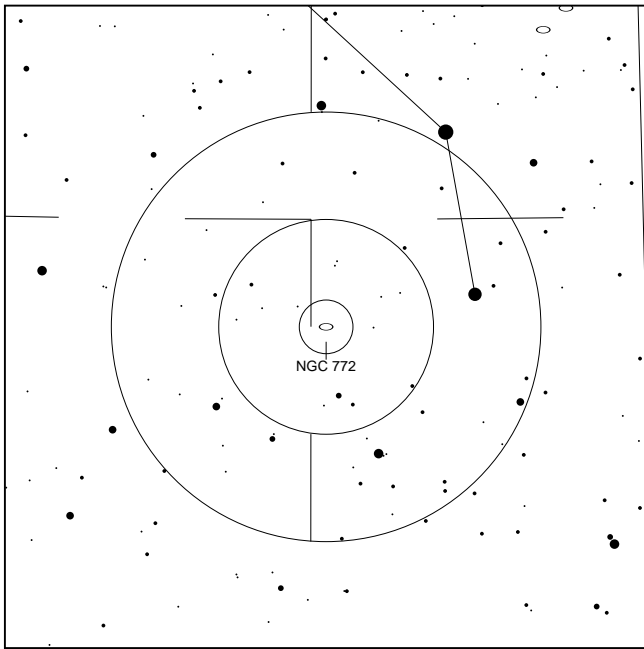
A Herschel 400 Object

Large, pale

U2000 chart: 206, **Tirion chart:** 16, **H-B Astroatlas:** B5, C42, D10. **NGC Description:** F, L, R, vsbM disc. **SAC DB Notes:** opposite dark lane from Altair. **Burnham's:** pp. 204, 231. **Luginbuhl & Skiff:** p. 30. **Deep Space CCD Atlas:** North p. 203.

Personal Notes:





NGC 772

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	01h59.4m	+19°00'	11.5	8.0'x5.0'	130°

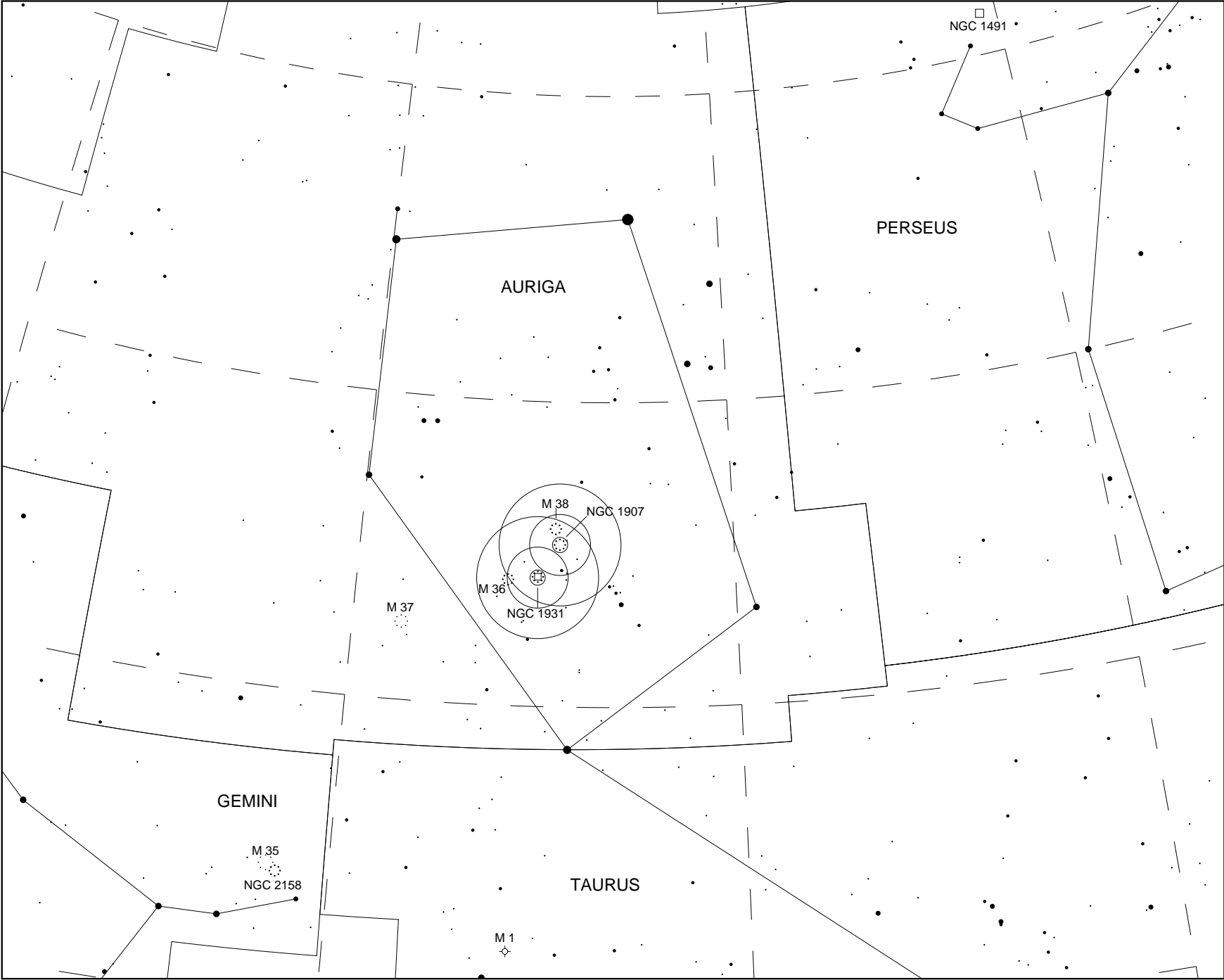
NGC 772, H I 112, UGC 1466

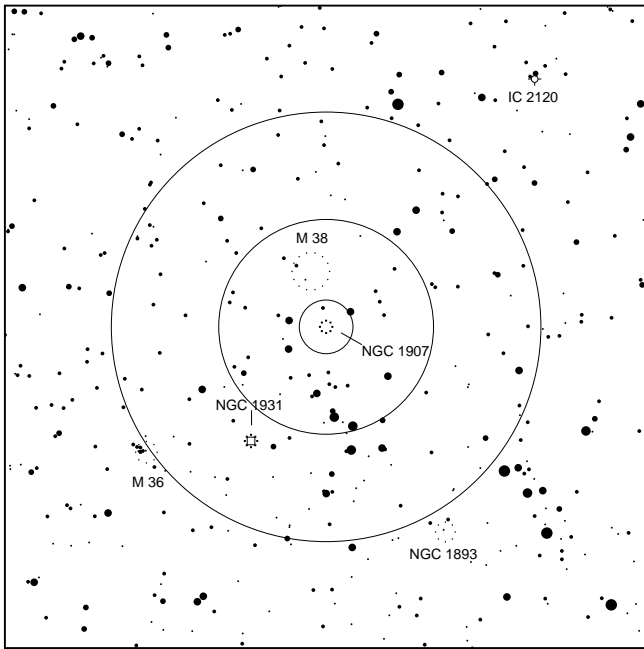
A Herschel 400 Object

Diffuse spiral

U2000 chart: 129, **Tirion chart:** 10, **H-B Astroatlas:** B13, C38. **NGC Description:** B, cL, R, gbM, r. **SAC DB Notes:** Several tightly coiled arms br on NW side. **Burnham's:** p. 248. **Luginbuhl & Skiff:** p. 32. **Deep Space CCD Atlas:** North p. 22.

Personal Notes:





NGC 1907

Type	R.A. (2000)	Dec	Mag.	Size
OC	05h28.0m	+35°19'	8.2	7.0'

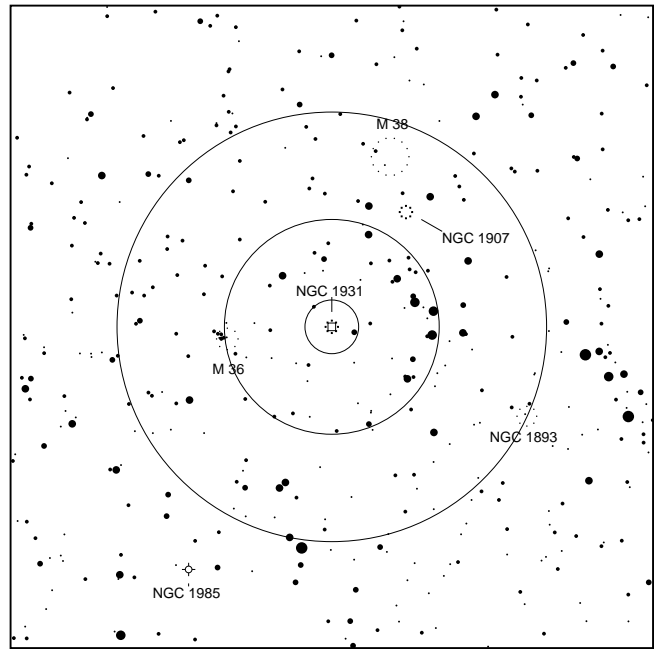
NGC 1907, H VII 39

A Herschel 400 Object

30* mags 9...

U2000 chart: 97, **Tirion chart:** 5, **H-B Astroatlas:** B13, C35, D25. **NGC Description:** Cl, pRi, pC, R, st9...12. **Burnham's:** p. 260. **Luginbuhl & Skiff:** p. 35. **Deep Space CCD Atlas:** North p. 51.

Personal Notes:



NGC 1931

Type	R.A. (2000)	Dec	Mag.	Size
OC	05h31.4m	+34°15'	11.3	3'x3'

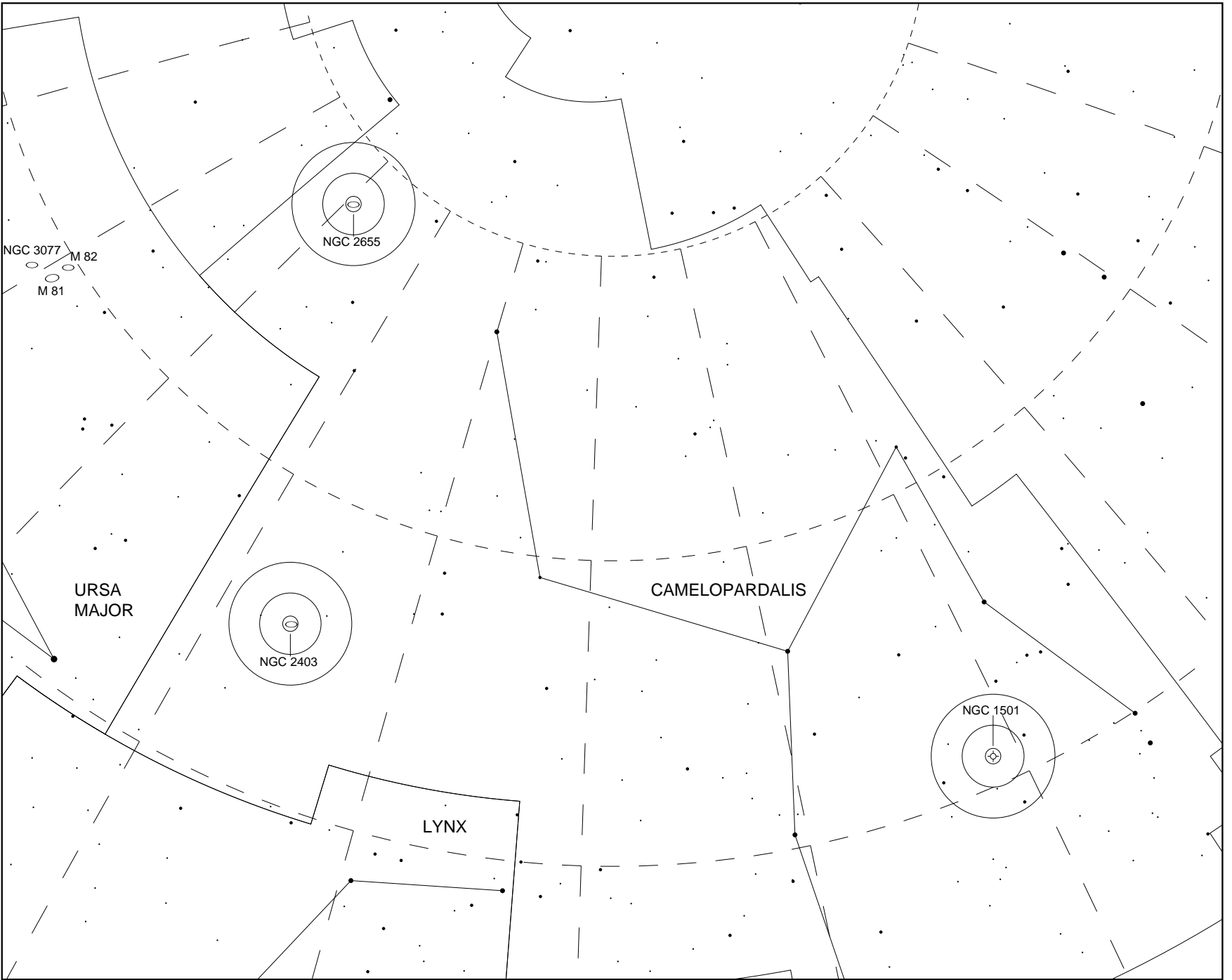
NGC 1931, H I 261

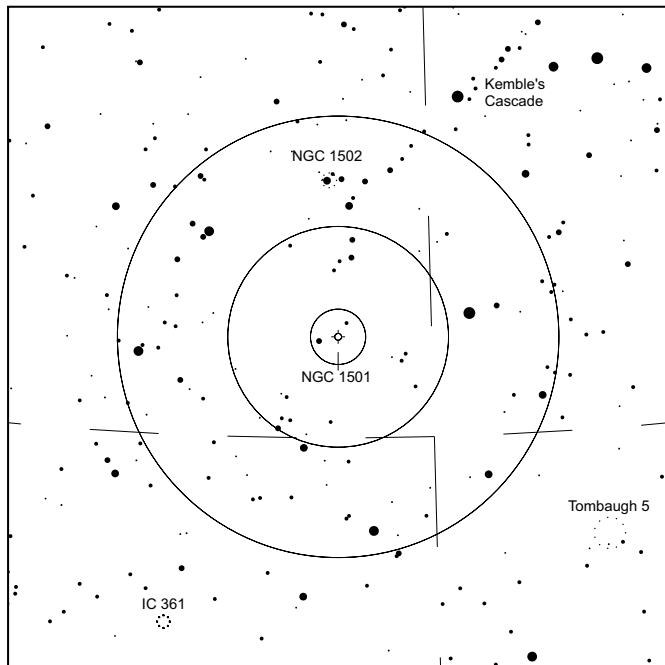
A Herschel 400 Object

Haze around 4*

U2000 chart: 97, **Tirion chart:** 5, **H-B Astroatlas:** B13, C35, D25. **NGC Description:** vB, L, R, B***in M. **SAC DB Notes:** Contains triple ADS 4112. **Burnham's:** p. 260. **Luginbuhl & Skiff:** p. 35. **Deep Space CCD Atlas:** North p. 52.

Personal Notes:





NGC 1501

Type	R.A. (2000)	Dec	Mag.	Size
PN	04h07.0m	+60°55'	12	55.8"x48"

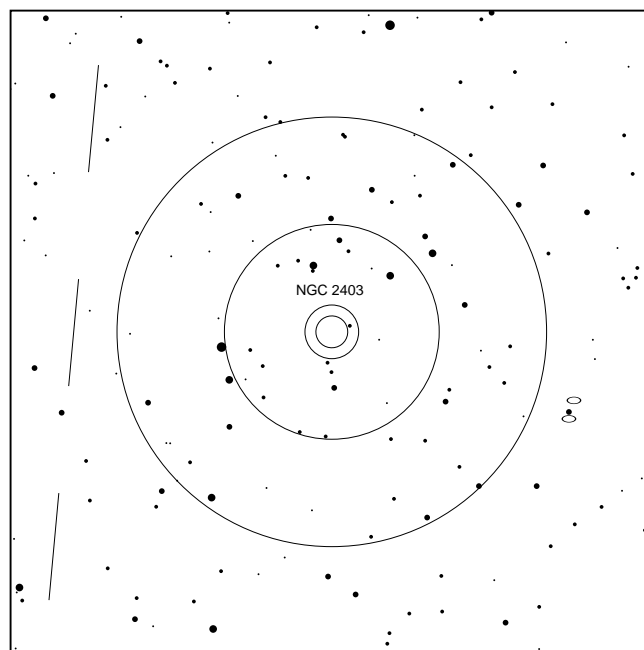
NGC 1501, H IV 53, PK144+6.1

A Herschel 400 Object

Faint, dark center

U2000 chart: 39, **Tirion chart:** 1, **H-B AstroAtlas:** B2, C18. **NGC Description:** pB, pS, vIE, 1'Diam. **Burnham's:** pp. 319, 336. **Luginbuhl & Skiff:** p. 40. **Deep Space CCD Atlas:** North p. 40.

Personal Notes:



NGC 2403

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sc	07h36.8m	+65°37'	9.5	17.8'	127°

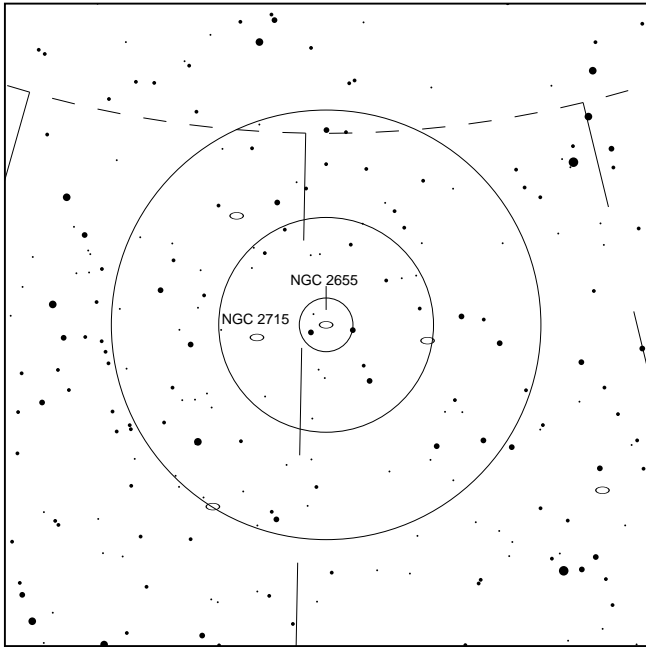
NGC 2403, H V 44, C 7, UGC 3918

A Herschel 400 Object

Visible in binocs

U2000 chart: 21, **Tirion chart:** 1, **H-B AstroAtlas:** B2, C15. **NGC Description:** !! cB, eL, vmE, vgmbMN. **SAC DB Notes:** in M81 group, many well res irreg arms, broad bar. **Burnham's:** pp. 319, 331. **Luginbuhl & Skiff:** p. 41-2. **Deep Space CCD Atlas:** North p. 81.

Personal Notes:



NGC 2655

Type	R.A. (2000)	Dec	Mag.	Size
S	08h55.6m	+78°13'	11.5	6.5'x5.8'

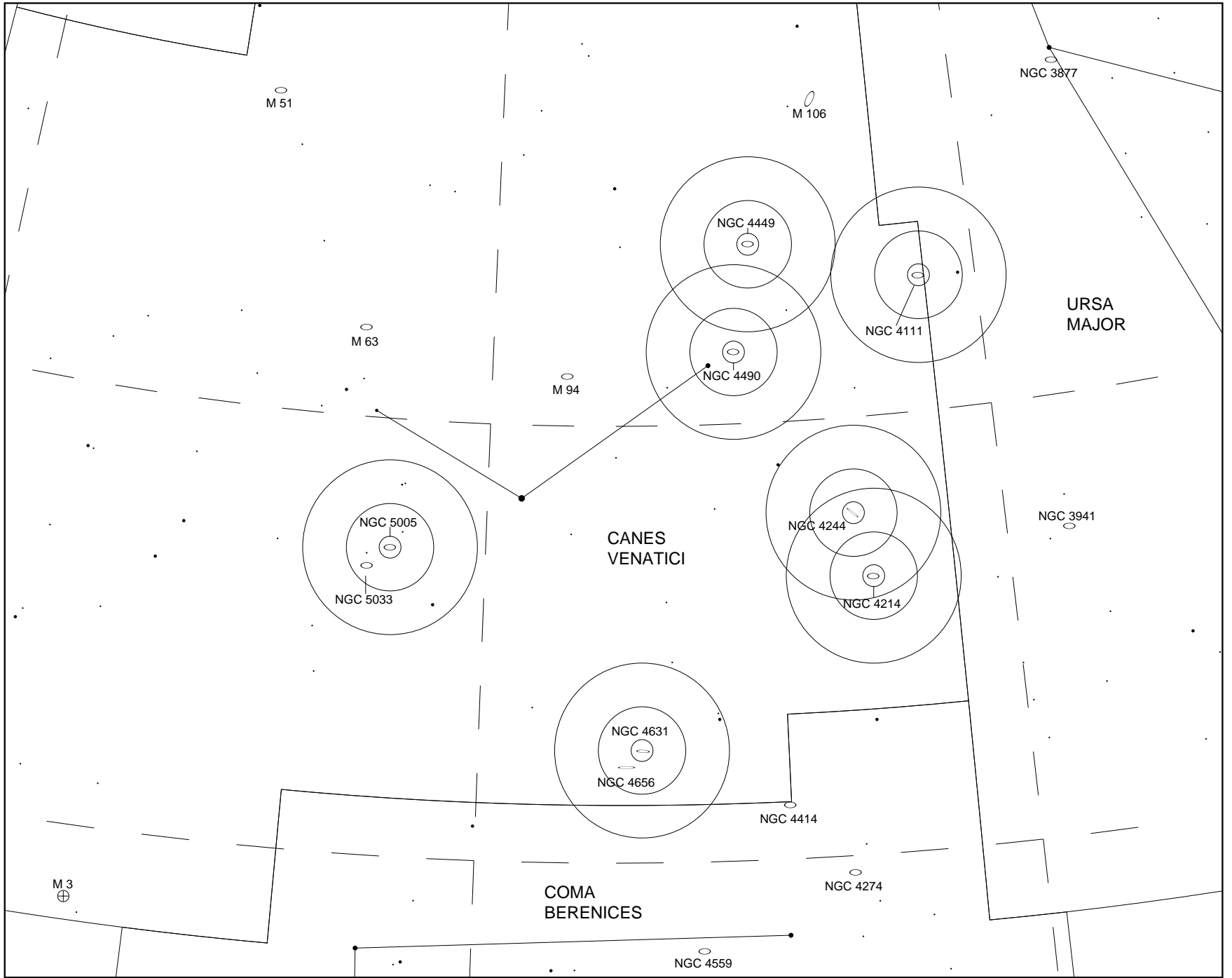
NGC 2655, H I 288, UGC 4637

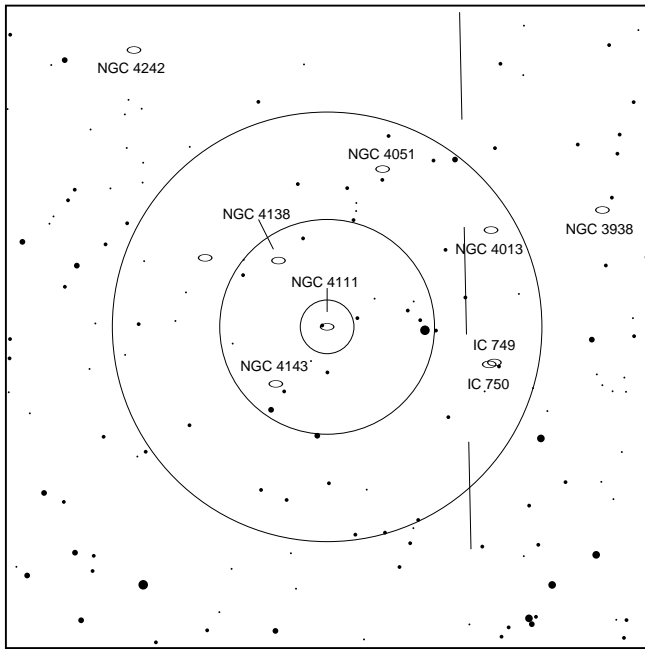
A Herschel 400 Object

Stellar nucleus

U2000 chart: 7, **Tirion chart:** 1, **H-B Astroatlas:** B2, C2. **NGC Description:** vB, cL, 1E 90, gsvmbM, diff. **SAC DB Notes:** large nucleus w asym dk matter in lens, faint outer whirls. **Burnham's:** p. 320. **Luginbuhl & Skiff:** p. 42. **Deep Space CCD Atlas:** North p. 95.

Personal Notes:





NGC 4111

Type	R.A. (2000)	Dec	Mag.	Size	PA
S0	12h07.1m	+43°05'	11.4	4.3'x0.8'	150°

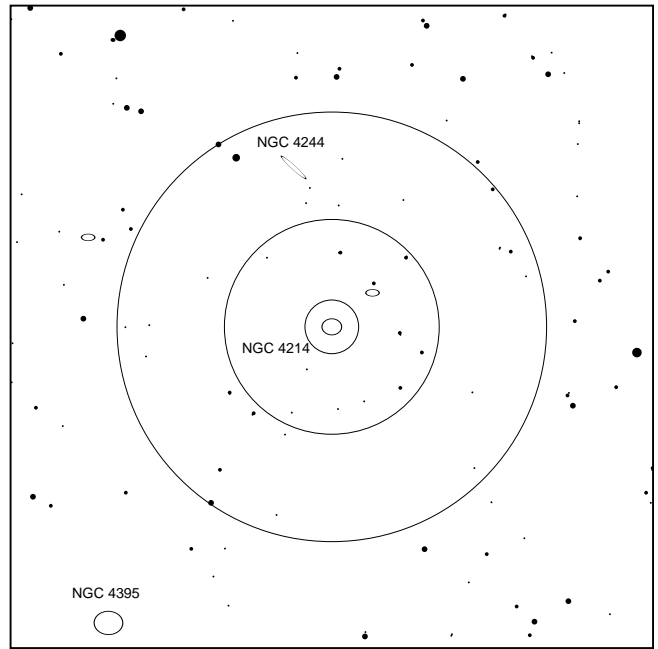
NGC 4111, H I 195, UGC 7103, Ho 333a

A Herschel 400 Object

Bright lens shape

U2000 chart: 74, **Tirion chart:** 7, **H-B AstroAtlas:** B9, C30, D35. **NGC Description:** vB, pS, mE151, vsvBN. **SAC DB Notes:** NGC 4109 @ 4.8'. **Burnham's:** p. 355. **Luginbuhl & Skiff:** p. 46. **Deep Space CCD Atlas:** North p. 124.

Personal Notes:



NGC 4214

Type	R.A. (2000)	Dec	Mag.	Size
Ir	12h15.7m	+36°20'	10.3	11'x9.0'

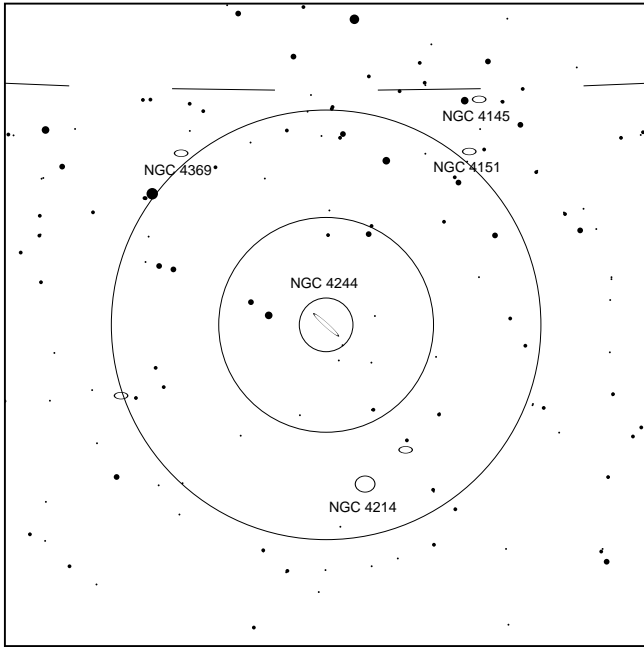
NGC 4214, NGC 4208, H I 95, UGC 7278

A Herschel 400 Object

Large irregular

U2000 chart: 107, **Tirion chart:** 7, **H-B AstroAtlas:** B9, C30. **NGC Description:** cB, cL, iE, biN, =NGC 4208. **Burnham's:** p. 356. **Luginbuhl & Skiff:** p. 47. **Deep Space CCD Atlas:** North p. 127.

Personal Notes:



NGC 4244

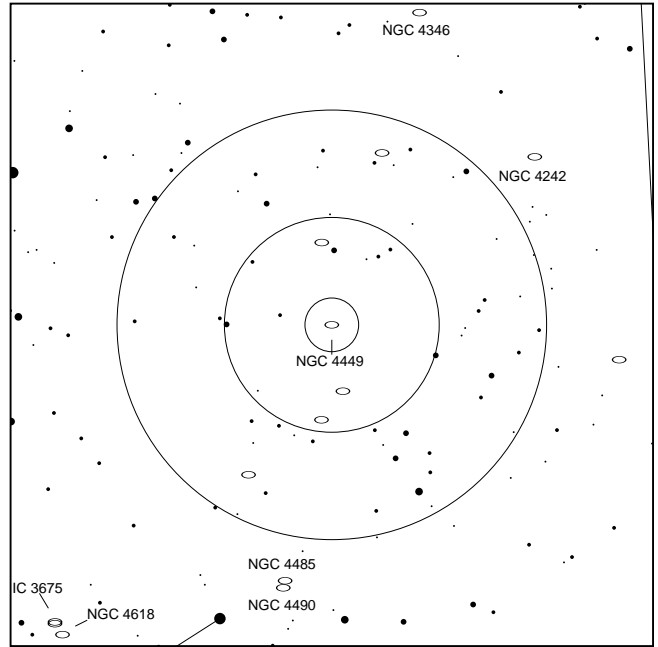
Type	R.A. (2000)	Dec	Mag.	Size	PA
S	12h17.5m	+37°49'	10.8	18.5'x2.3'	48°

NGC 4244, H V 41, C 26, UGC 7322

Huge edge-on

U2000 chart: 107, **Tirion chart:** 7, **H-B Astroatlas:** B9, C30. **NGC Description:** pB, vL, eE43, vgbM, vsBN or *?. **Burnham's:** pp. 356, 380. **Luginbuhl & Skiff:** p. 47. **Deep Space CCD Atlas:** North p. 128.

Personal Notes:



NGC 4449

Type	R.A. (2000)	Dec	Mag.	Size	PA
Ir	12h28.2m	+44°06'	10	6.0'x4.5'	45°

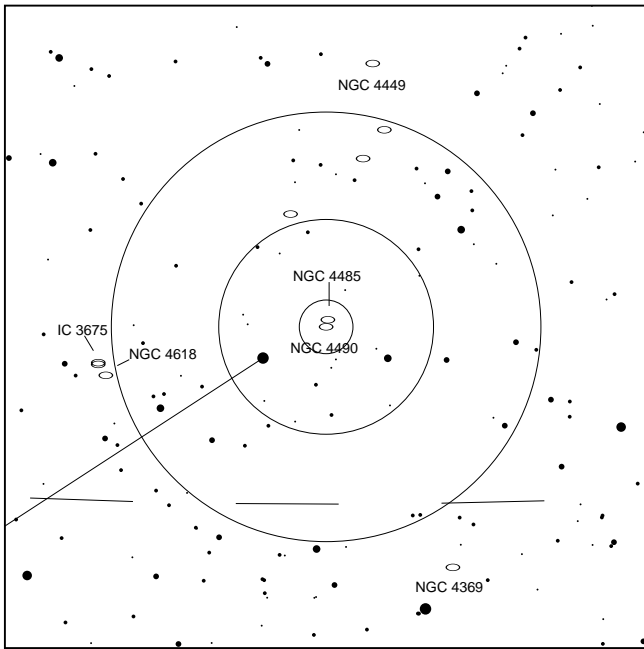
NGC 4449, H I 213, C 21, UGC 7592

A Herschel 400 Object

Bizarre rectangular shape

U2000 chart: 75, **Tirion chart:** 7, **H-B Astroatlas:** B9, C30, D35. **NGC Description:** vB, cL, mE, D or bifid, rrr, *F, B center w N or *. **Burnham's:** pp. 356, 380. **Luginbuhl & Skiff:** p. 48. **Deep Space CCD Atlas:** North p. 135.

Personal Notes:



NGC 4490

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sc	12h30.6m	+41°39'	10.1	7.0'x3.5'	125°

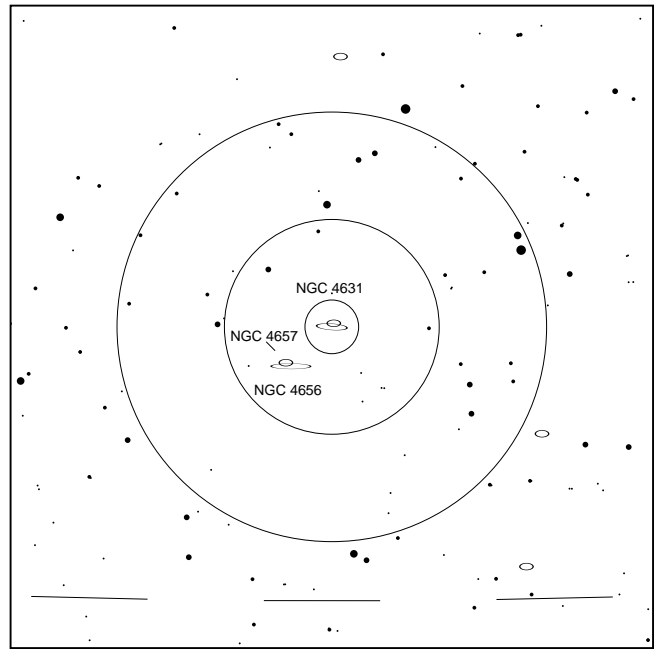
NGC 4490, H I 198, UGC 7651

A Herschel 400 Object

Bright spiral

U2000 chart: 75, **Tirion chart:** 7, **H-B AstroAtlas:** B9, C30. **NGC Description:** vB, vL, mE130, r, sf of 2. **SAC DB Notes:** disrupted, P w NGC 4485 @ 3.5'. **Burnham's:** p. 356. **Luginbuhl & Skiff:** p. 48. **Deep Space CCD Atlas:** North p. 136.

Personal Notes:



NGC 4631

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sc	12h42.1m	+32°33'	9.8	17.0'x3.5'	86°

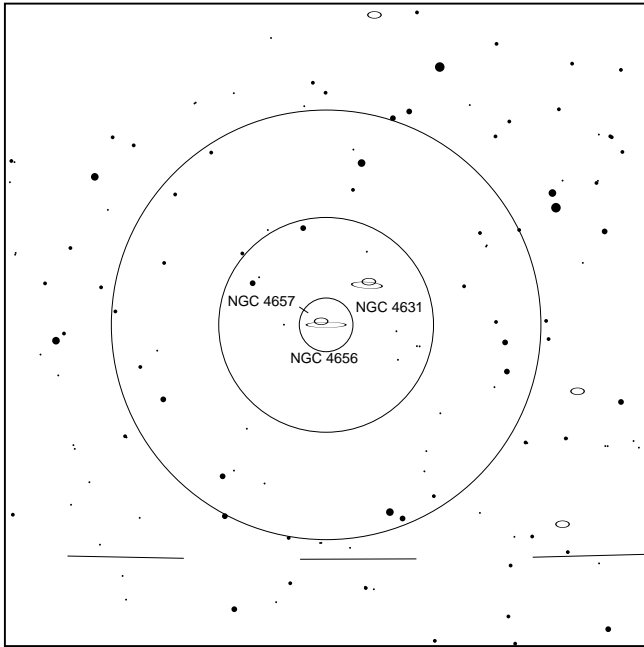
NGC 4631, H V 42, C 32, UGC 7865

A Herschel 400 Object

Huge edge-on

U2000 chart: 108, **Tirion chart:** 7, **H-B AstroAtlas:** B9, C29. **NGC Description:** vB, vL, eE70, bMN, * att n. **SAC DB Notes:** P w NGC 4627 @ 2.5'. **Burnham's:** pp. 357, 378. **Luginbuhl & Skiff:** p. 48. **Deep Space CCD Atlas:** North p. 142.

Personal Notes:



NGC 4656

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sc	12h43.9m	+32°11'	10.6	22.0'x3.0'	33°

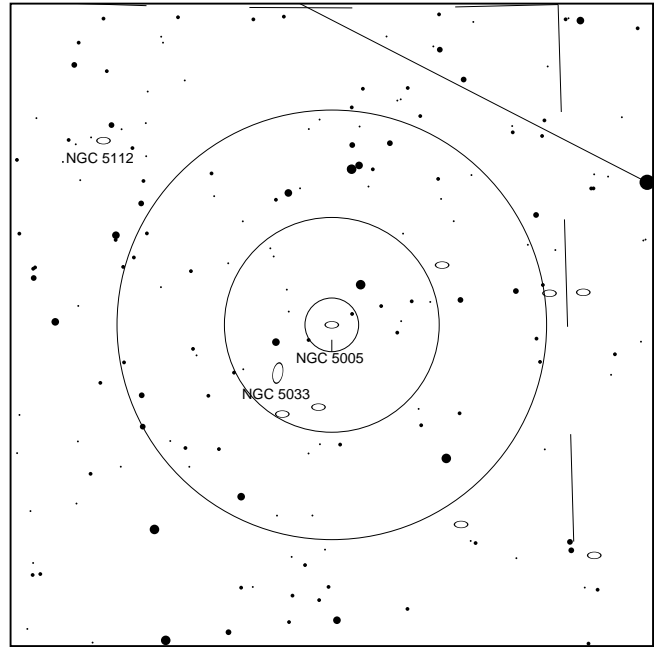
NGC 4656, H I 176, UGC 7907

A Herschel 400 Object

Companion is NGC 4657

U2000 chart: 108, **Tirion chart:** 7, **H-B Astroatlas:** B9, C29. **NGC Description:** pB, L, vmE34, sp of 2. **SAC DB Notes:** NGC 4657 superimposed. **Burnham's:** pp. 357, 379. **Luginbuhl & Skiff:** p. 48. **Deep Space CCD Atlas:** North p. 143.

Personal Notes:



NGC 5005

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	13h11.0m	+37°03'	10.6	6.3'x3.0'	65°

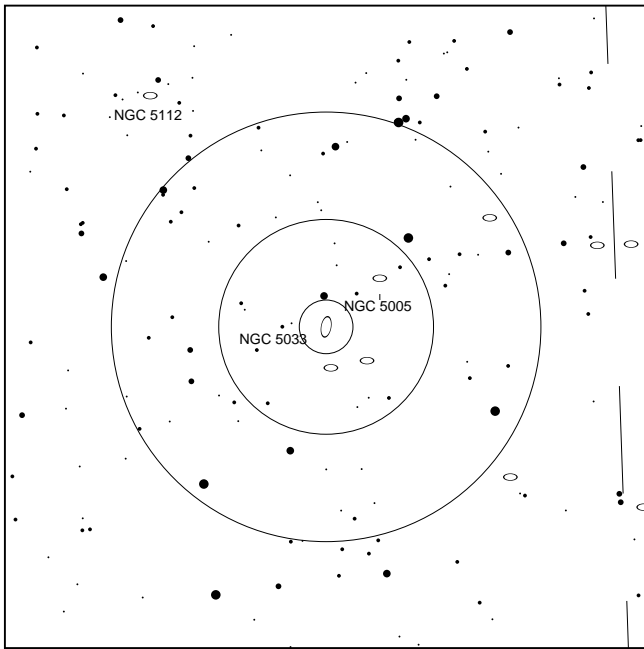
NGC 5005, H I 96, C 29, UGC 8256

A Herschel 400 Object

Near Alpha CVn

U2000 chart: 109, **Tirion chart:** 7, **H-B Astroatlas:** B9, C29, D30. **NGC Description:** vB, vL, vmE66, vsbMN. **SAC DB Notes:** P w NGC 5033, eBN in B lens; sev knotty arms. **Burnham's:** pp. 357, 379. **Luginbuhl & Skiff:** p. 49. **Deep Space CCD Atlas:** North p. 148.

Personal Notes:



NGC 5033

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	13h13.5m	+36°36'	10.9	11.5'x5.5'	170°

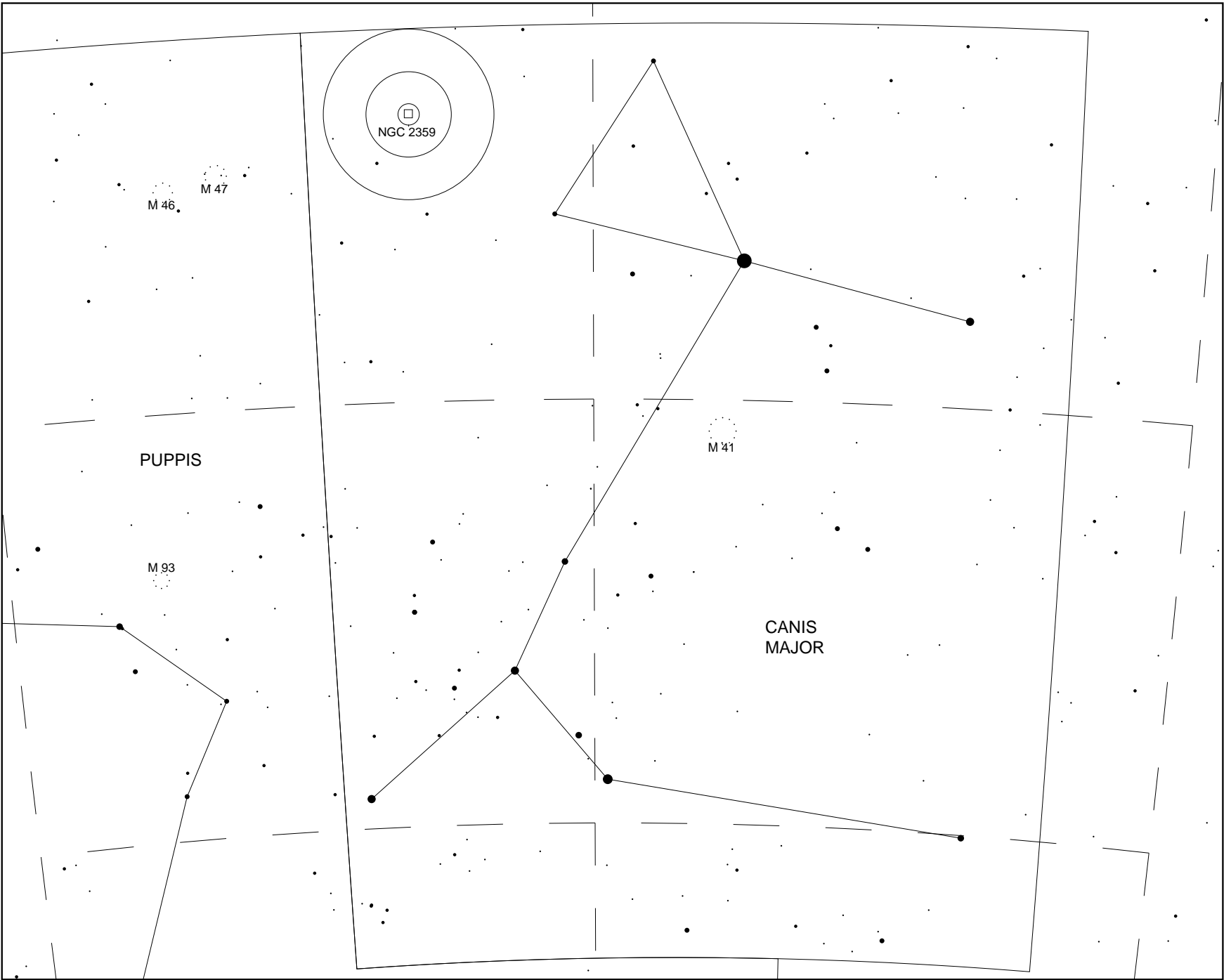
NGC 5033, H I 97, UGC 8307

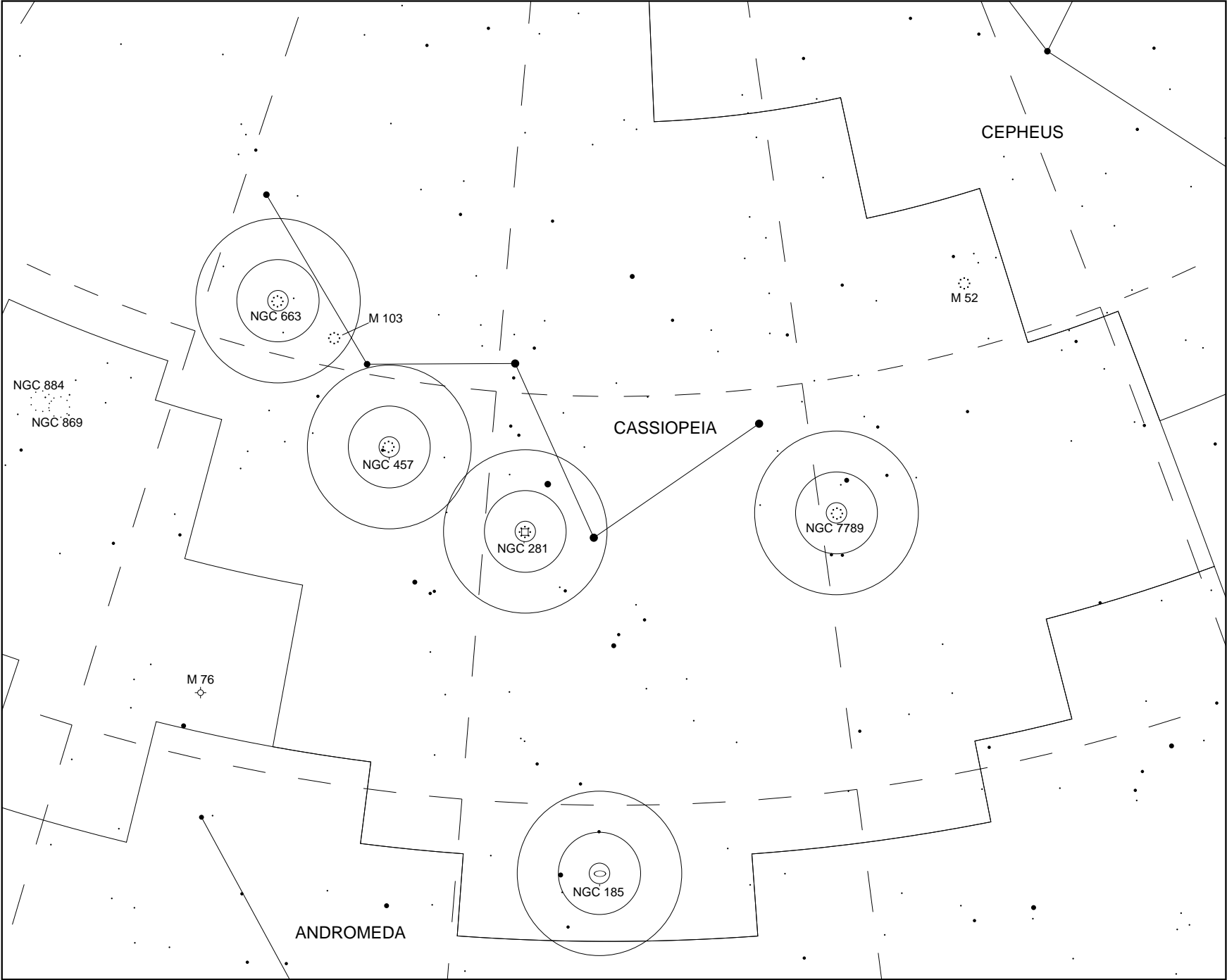
A Herschel 400 Object

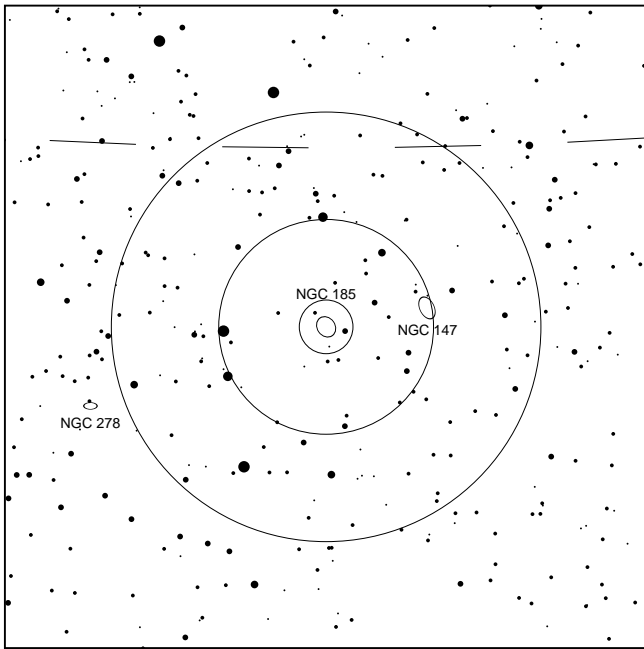
Near NGC 5005

U2000 chart: 109, **Tirion chart:** 7, **H-B Astroatlas:** B9, C29, D30. **NGC Description:** vB, pL, E167, smbM, vBN. **SAC DB Notes:** P w NGC 5005, svBN in B bulge w spir patt of dk lanes. **Burnham's:** p. 357. **Luginbuhl & Skiff:** p. 49. **Deep Space CCD Atlas:** North p. 149.

Personal Notes:







NGC 185

Type	R.A. (2000)	Dec	Mag.	Size	PA
dE0	00h39.0m	+48°20'	9.7	12'x10'	35°

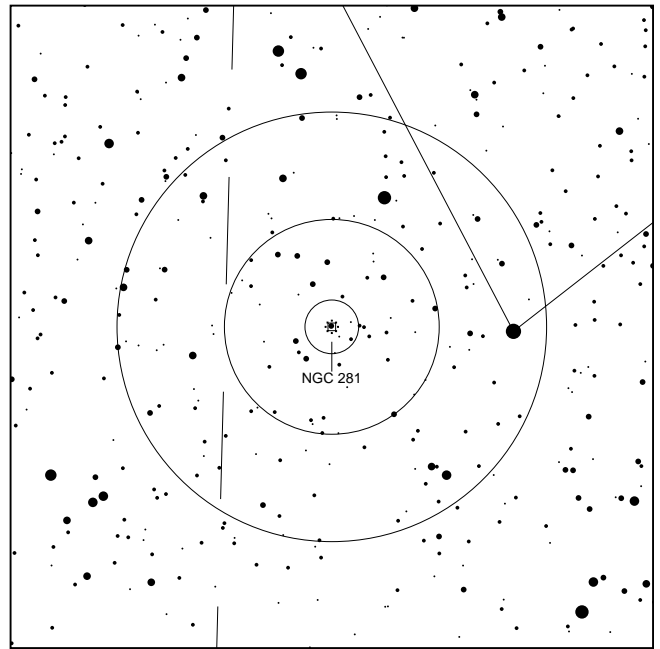
NGC 185, H II 707, C 18, UGC 396

A Herschel 400 Object

Distant companion to M31

U2000 chart: 60, **Tirion chart:** 4, **H-B Astroatlas:** B1, C3. **NGC Description:** pB, vL, iR, vgmbM, r. **SAC DB Notes:** Dwarf elliptical, NGC 396. **Burnham's:** pp. 484, 527-30. **Luginbuhl & Skiff:** pp. 62, 63. **Deep Space CCD Atlas:** North p. 5.

Personal Notes:



NGC 281

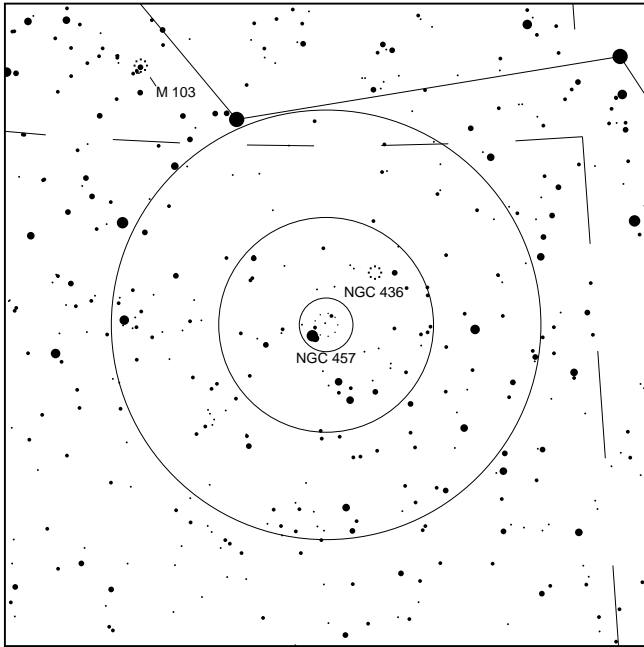
Type	R.A. (2000)	Dec	Mag.	Size
OC	00h52.8m	+56°37'	7.4	4.0'

NGC 281

Responds to UHC filter

U2000 chart: 36, **Tirion chart:** 1, **H-B Astroatlas:** B1, C20, D27. **NGC Description:** F, vL, dif, S triple * on np edge. **SAC DB Notes:** Nebula 35'x30' Type E. **Burnham's:** pp. 484, 525. **Luginbuhl & Skiff:** p. 63. **Deep Space CCD Atlas:** North p. 10.

Personal Notes:



NGC 457

Type	R.A. (2000)	Dec	Mag.	Size
OC	01h19.1m	+58°20'	6.4	13.0'

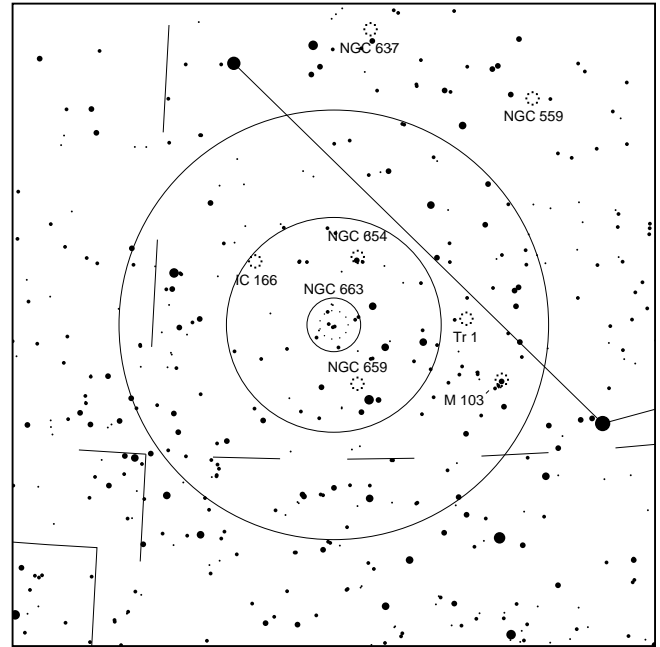
NGC 457, H VII 42, C 13

A Herschel 400 Object

Rich, 80*

U2000 chart: 36, **Tirion chart:** 1, **H-B Astroatlas:** B1, C20, D27. **NGC Description:** Cl, B, L, pRi, *7, 8, 10. **SAC DB Notes:** Phi Cas is not a member, Not incl in mag. **Burnham's:** pp. 484, 530-1. **Luginbuhl & Skiff:** p. 63-4. **Deep Space CCD Atlas:** North p. 13.

Personal Notes:



NGC 663

Type	R.A. (2000)	Dec	Mag.	Size
OC	01h46.0m	+61°15'	7.1	16.0'

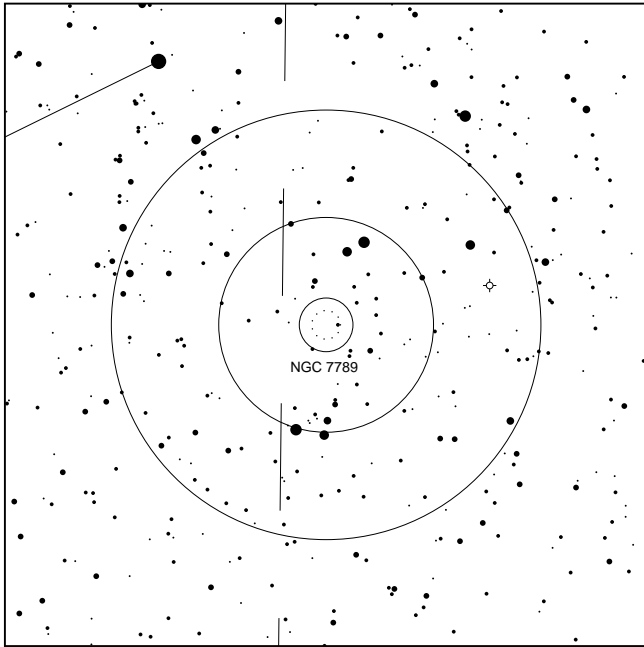
NGC 663, H VI 31, C 10

A Herschel 400 Object

NGCs 654 & 659 nearby

U2000 chart: 16, **Tirion chart:** 1, **H-B Astroatlas:** B1, C20, D27. **NGC Description:** Cl, B, L, eRi, st pL. **SAC DB Notes:** In Cas OB8, incl Struve 151 152 & 153. **Burnham's:** pp. 485, 526. **Luginbuhl & Skiff:** p. 64. **Deep Space CCD Atlas:** North p. 19.

Personal Notes:



NGC 7789

Type	R.A. (2000)	Dec	Mag.	Size
OC	23h57.0m	+56°44'	6.7	16.0'

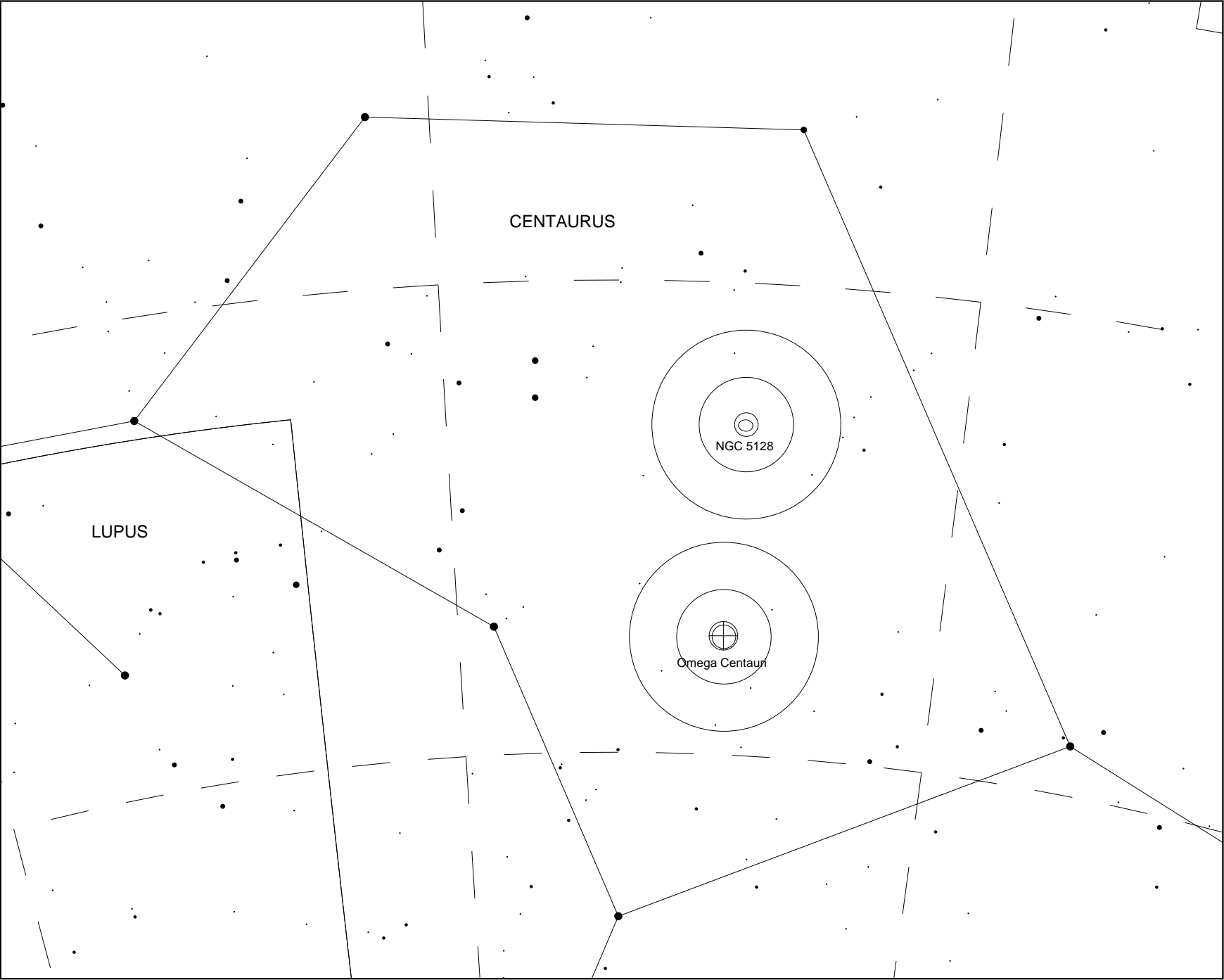
NGC 7789, H VI 30

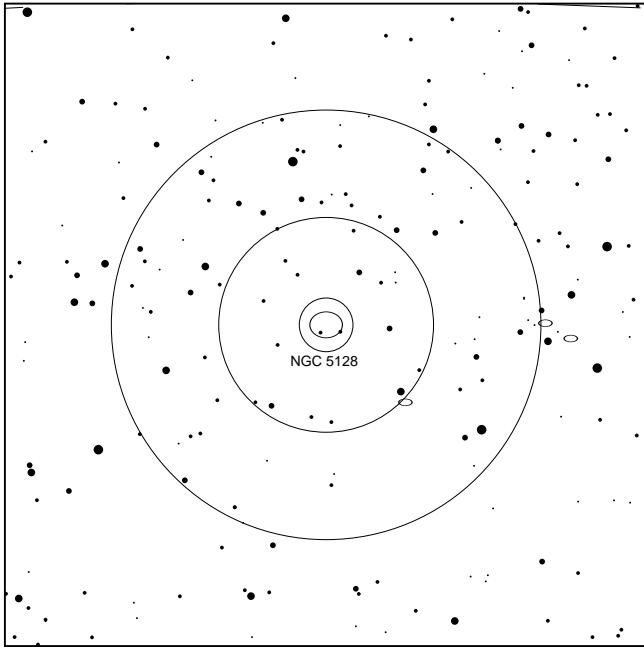
A Herschel 400 Object

Very rich, many dim*

U2000 chart: 35, **Tirion chart:** 3, **H-B Astroatlas:** B1, C3, D6. **NGC Description:** Cl, vL, vRi, vmC, st 11...18. **SAC DB Notes:** 1000 members from 11 to 18 mag. **Burnham's:** pp. 485, 487, 488, 532-3. **Luginbuhl & Skiff:** p. 67. **Deep Space CCD Atlas: North** p. 257.

Personal Notes:





NGC 5128

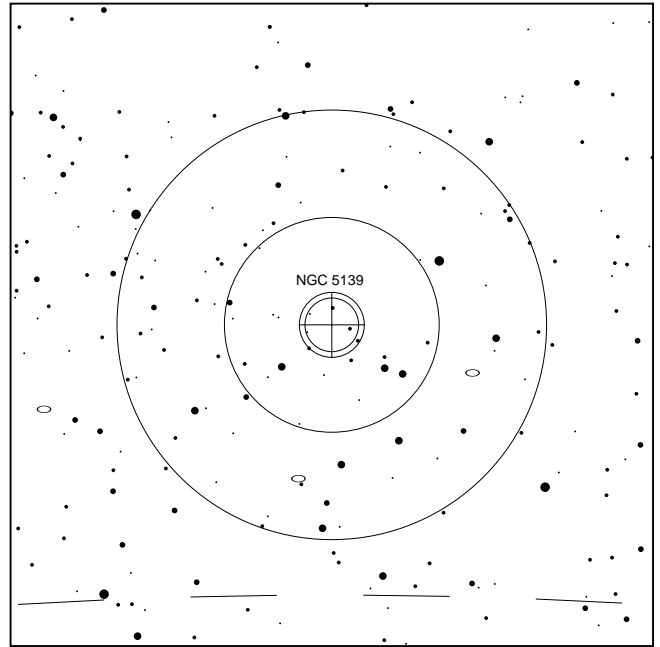
Type	R.A. (2000)	Dec	Mag.	Size	PA
SOp	13h25.5m	-43°01'	8.0	18'x15'	35°

NGC 5128, Dunlop 482, C 77, MCG-7-28-001

Equatorial dust lane

U2000 chart: 403, **Tirion chart:** 21, **H-B Astroatlas:** B10, C65, D32. **NGC Description:** !!vB, vL, vmE122, bifid. **SAC DB Notes:** Dark central band, radio source. **Burnham's:** pp. 546, 566-9. **Luginbuhl & Skiff:** p. 68. **Deep Space CCD Atlas:** South p. 92.

Personal Notes:



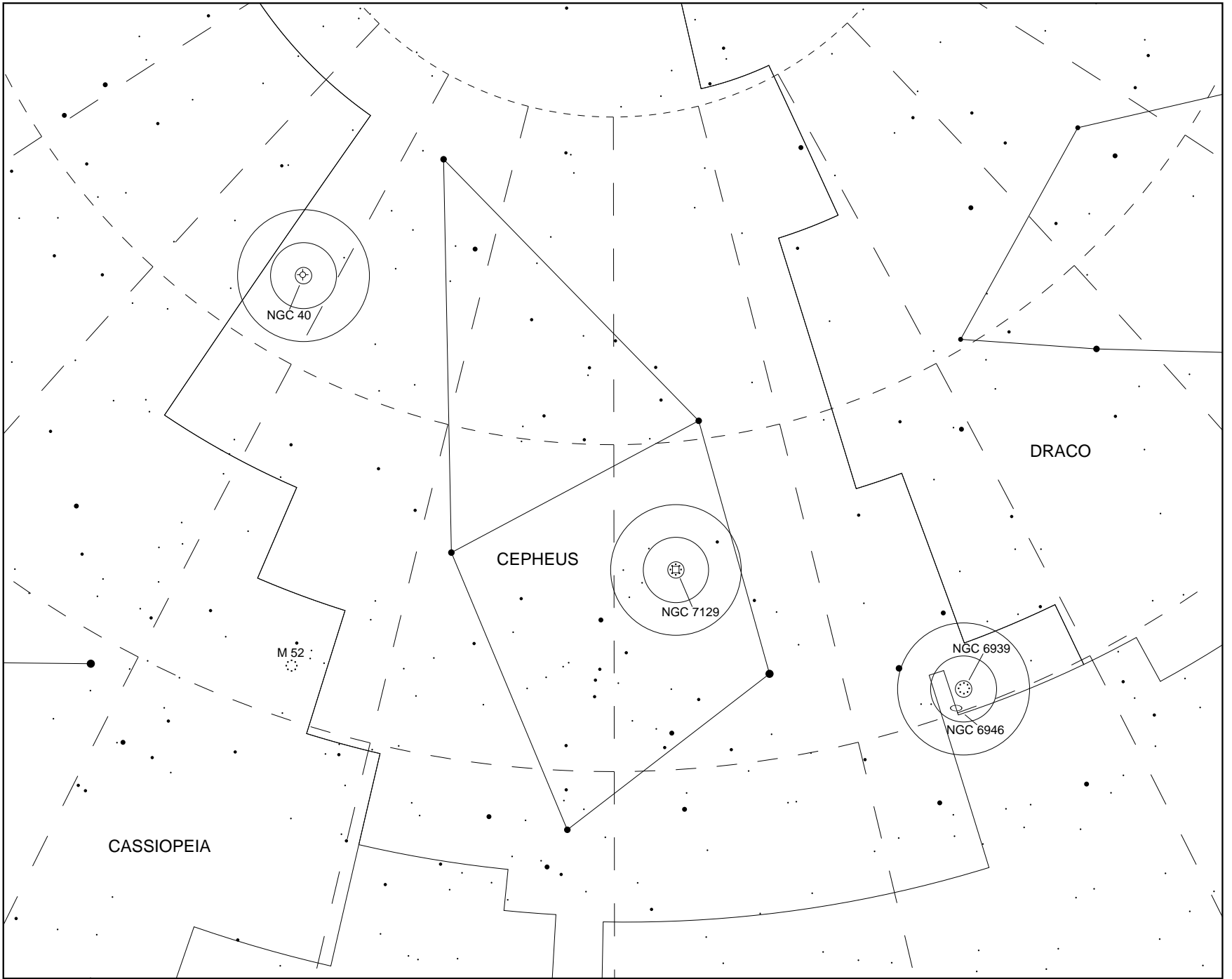
NGC 5139

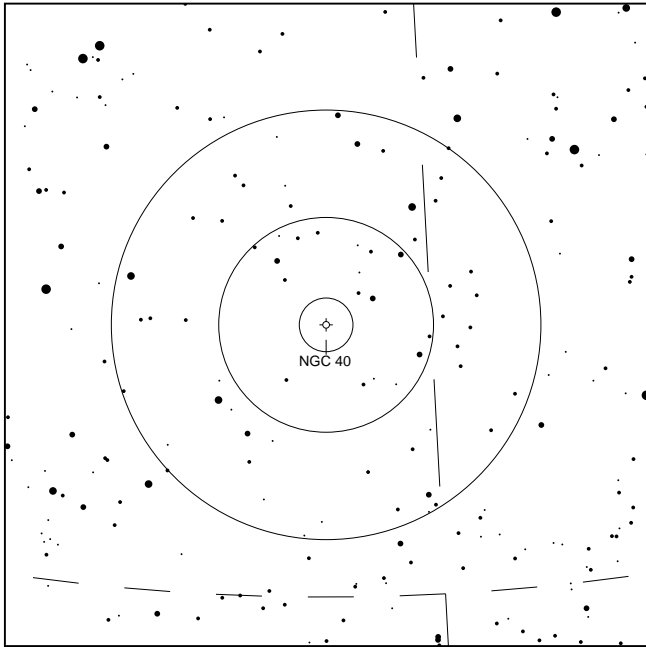
Type	R.A. (2000)	Dec	Mag.	Size
GC	13h26.8m	-47°29'	3.7	36'

NGC 5139, Omega Centauri, C 80

U2000 chart: 403, **Tirion chart:** 21, **H-B Astroatlas:** B10, C83, D32. **NGC Description:** !!!eL, B, eRi, vvC. **SAC DB Notes:** Stars mags 11..., finest globular, magnificent object. **Burnham's:** pp. 546, 558-66. **Luginbuhl & Skiff:** p. 68. **Deep Space CCD Atlas:** South p. 92.

Personal Notes:





NGC 40

Type	R.A. (2000)	Dec	Mag.	Size
PN	00h13.0m	+72°32'	10.7	60"x40"

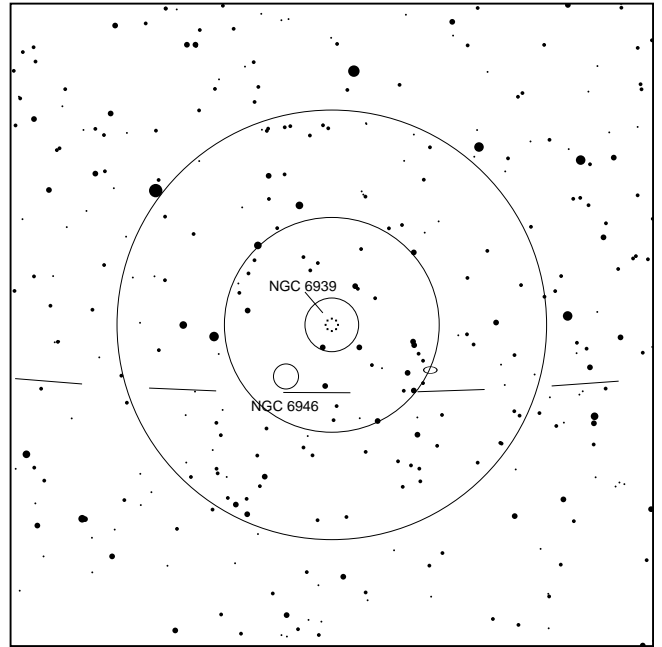
NGC 40, H IV 58, PK120+9.1, C 2

A Herschel 400 Object

Central* 11.6 mag

U2000 chart: 3, **Tirion chart:** 1, **H-B Astroatlas:** B1, C3. **NGC Description:** F, vS, R, vsmbM, L*cont f. **SAC DB Notes:** Lord Rosse saw spiral structure. **Burnham's:** p. 580. **Luginbuhl & Skiff:** p. 69. **Deep Space CCD Atlas:** North p. 2.

Personal Notes:



NGC 6939

Type	R.A. (2000)	Dec	Mag.	Size
OC	20h31.4m	+60°38'	7.8	8.0'

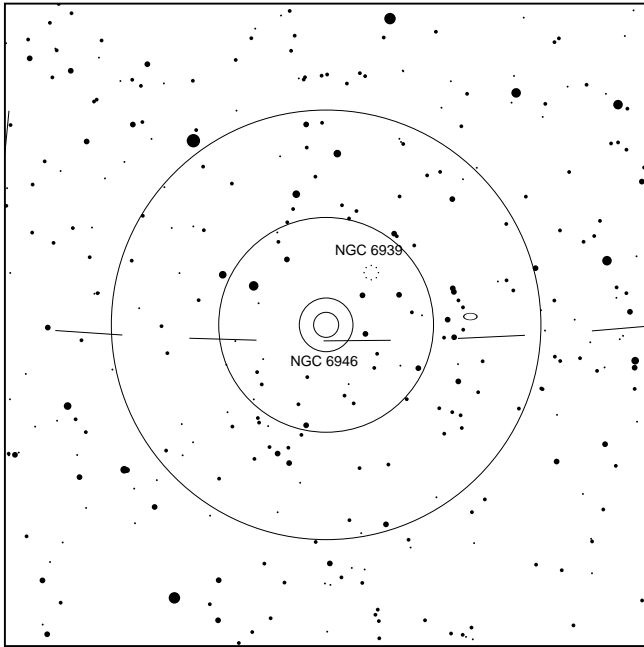
NGC 6939, H VI 42

A Herschel 400 Object

Rich, 80*, near NGC 6946

U2000 chart: 56, **Tirion chart:** 3, **H-B Astroatlas:** B1, C5. **NGC Description:** Cl, pL, eRi, pCM, *11..16. **SAC DB Notes:** Galaxy NGC 6946 38' SE. **Burnham's:** pp. 580, 620. **Luginbuhl & Skiff:** p. 69. **Deep Space CCD Atlas:** North p. 224.

Personal Notes:



NGC 6946

Type	R.A. (2000)	Dec	Mag.	Size
Sc	20h34.8m	+60°09'	10.5	14'

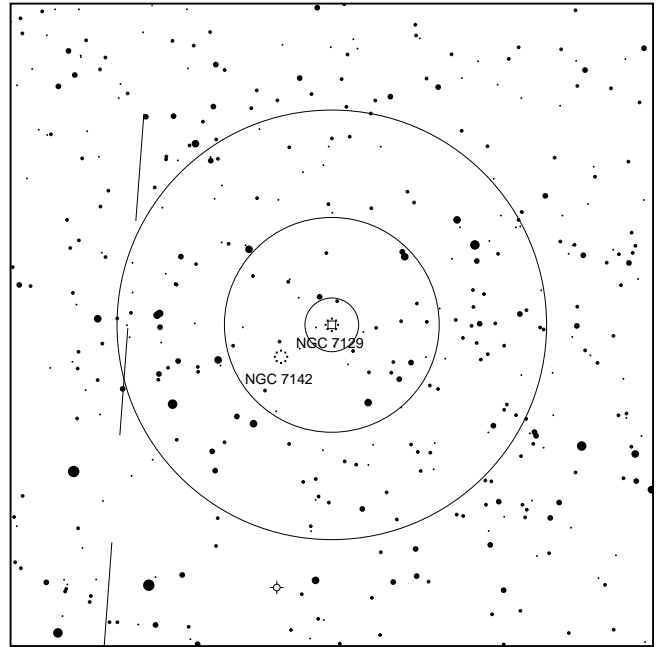
NGC 6946, H IV 76, C 12, UGC 11597

A Herschel 400 Object

Diffuse, face-on

U2000 chart: 56, **Tirion chart:** 3, **H-B Astroatlas:** B1, C5. **NGC Description:** vF, vL, vg, vsbM, rr. **SAC DB Notes:** One of nearest spirals. **Burnham's:** pp. 580, 615-7, 620. **Luginbuhl & Skiff:** not listed. **Deep Space CCD Atlas:** North p. 226.

Personal Notes:



NGC 7129

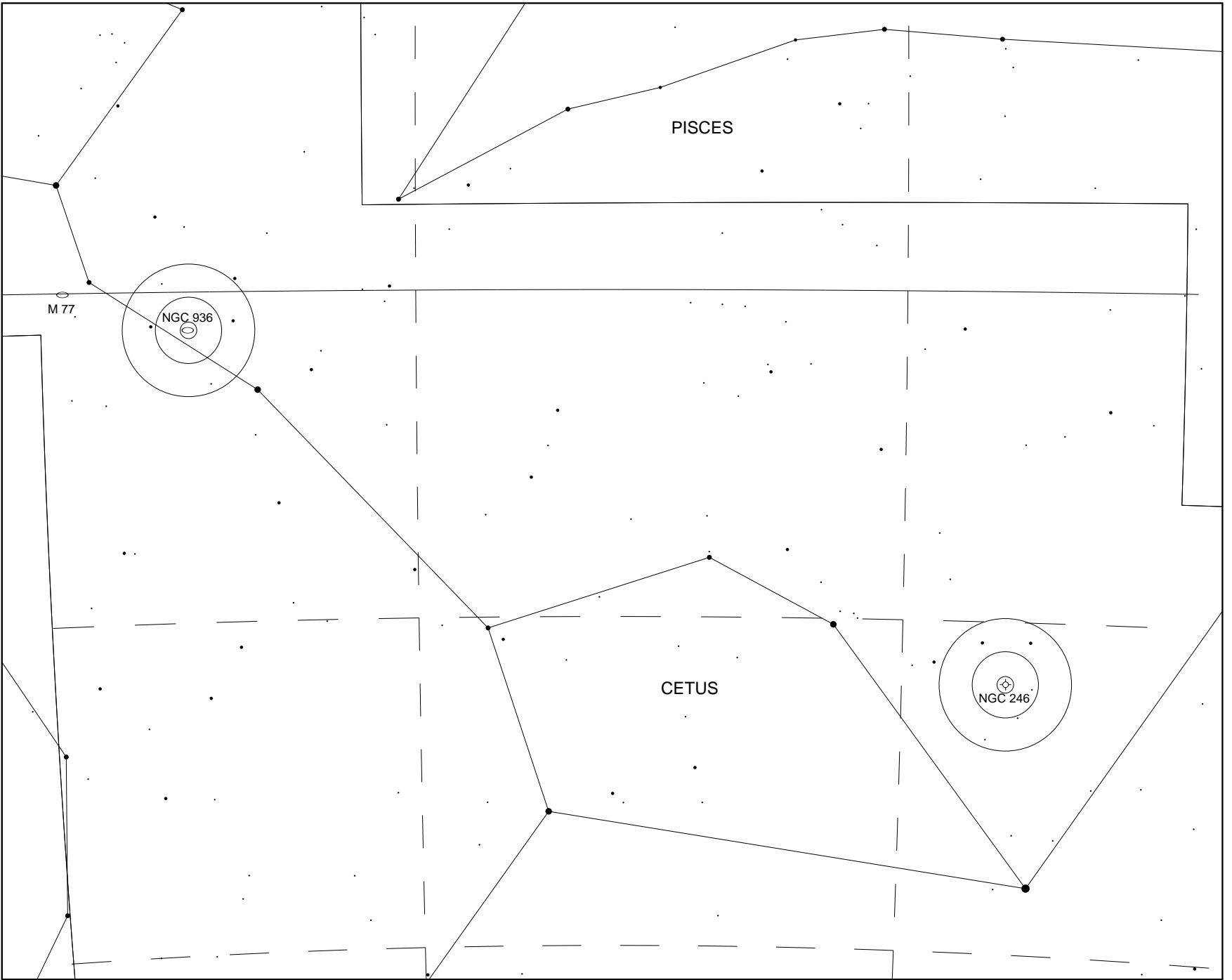
Type	R.A. (2000)	Dec	Mag.	Size
OC+N	21h41.3m	+66°06'	11.5	2.7'

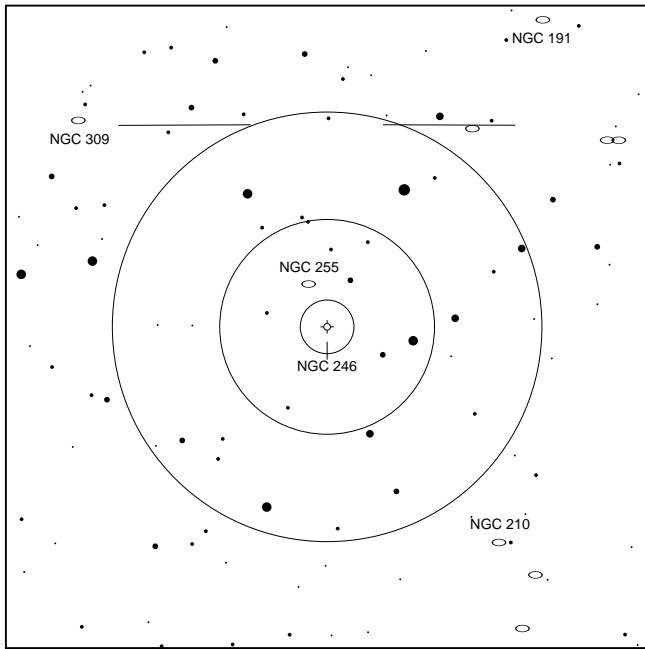
NGC 7129, H IV 75

Faint reflection nebula

U2000 chart: 33, **Tirion chart:** 3, **H-B Astroatlas:** B1, C5. **NGC Description:** !, cF, pL, gbM***. **SAC DB Notes:** Sev F * invl. **Burnham's:** p. 580. **Luginbuhl & Skiff:** p. 70. **Deep Space CCD Atlas:** North p. 238.

Personal Notes:





NGC 246

Type	R.A. (2000)	Dec	Mag.	Size
PN	00h47.1m	-11°53'	8.5	240"x210"

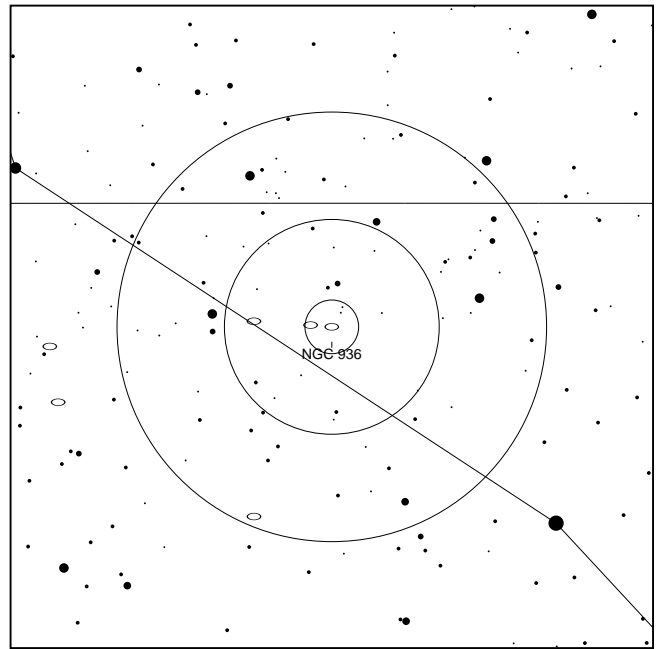
NGC 246, H V 25, PK118-74.1, C 56

A Herschel 400 Object

Low surface brightness

U2000 chart: 261, **Tirion chart:** 10, **H-B Astroatlas:** B4, C56. **NGC Description:** . **SAC DB Notes:** Galaxy NGC 255 15' NNE. **Burnham's:** pp. 627, 651. **Luginbuhl & Skiff:** p. 72-3. **Deep Space CCD Atlas:** North p. 8.

Personal Notes:



NGC 936

Type	R.A. (2000)	Dec	Mag.	Size	PA
SBa	02h27.7m	-01°09'	11	5.6'x4.5'	135°

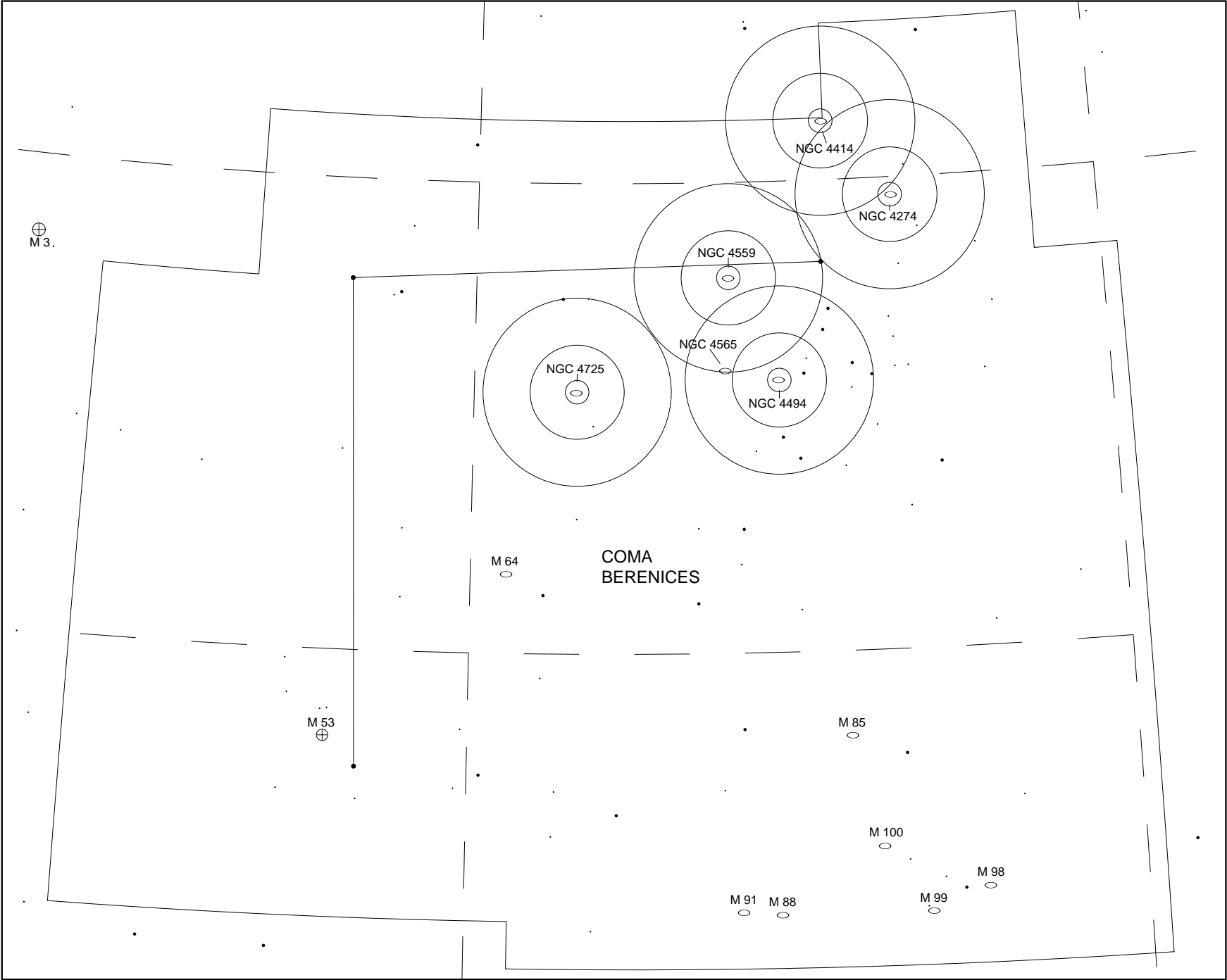
NGC 936, H IV 23, UGC 1929

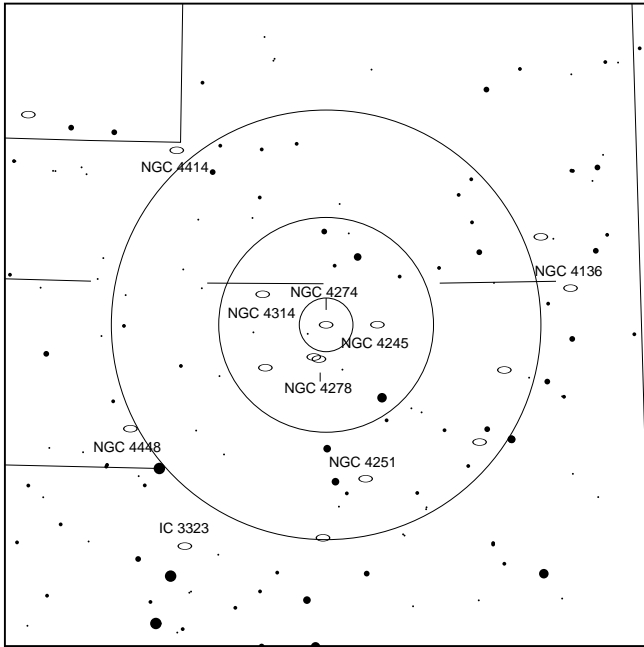
A Herschel 400 Object

Near M77

U2000 chart: 220, **Tirion chart:** 10, **H-B Astroatlas:** B14, C55. **NGC Description:** vB, vL, R, mbMN, p of 2. **SAC DB Notes:** Thick central bar, P w NGC 941 12' foll. **Burnham's:** p. 628. **Luginbuhl & Skiff:** p. 75. **Deep Space CCD Atlas:** North p. 26. South p. 15.

Personal Notes:





NGC 4274

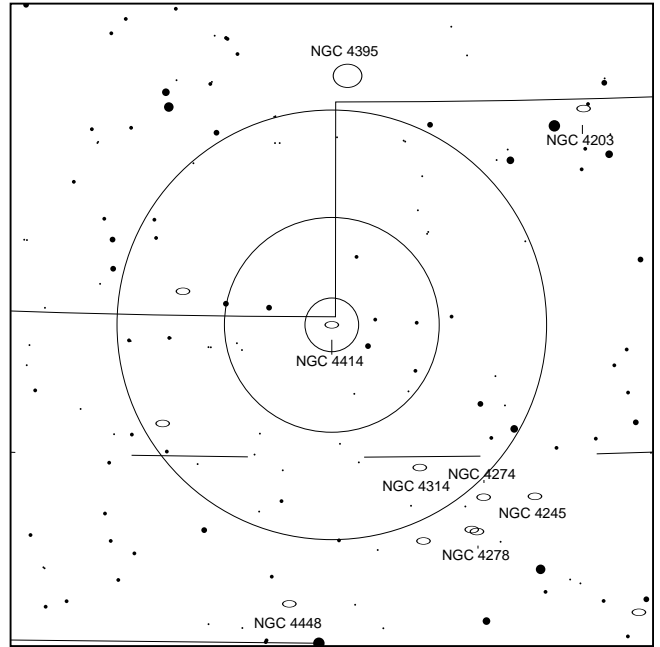
Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	12h19.9m	+29°37'	11.1	7.3'x2.7'	104°

NGC 4274, H I 75, UGC 7377

A Herschel 400 Object
 Many other NGC's near

H-B Astroatlas: B9, C30. **U2000 chart:** 107, **Tirion chart:** 7, **NGC Description:** vB, vL, E90, mbMN. **SAC DB Notes:** Saturn-like inner ring w F outer halo. **Burnham's:** p. 664. **Luginbuhl & Skiff:** p. 80. **Deep Space CCD Atlas:** North p. 129.

Personal Notes:



NGC 4414

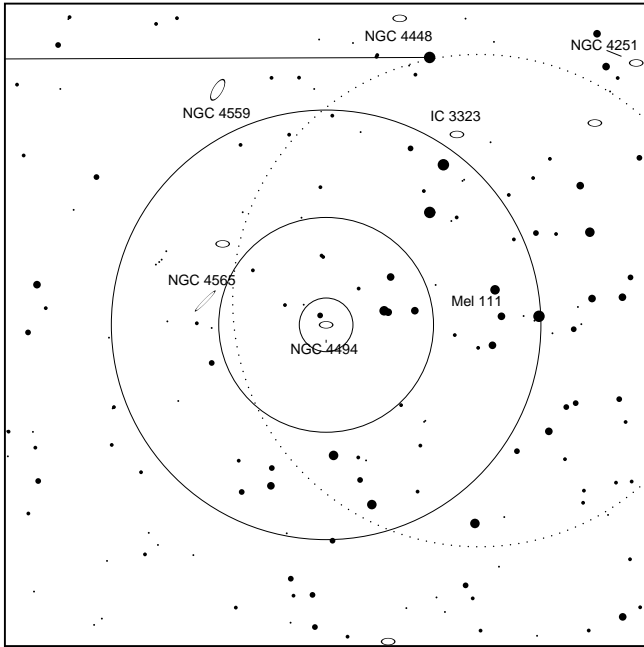
Type	R.A. (2000)	Dec	Mag.	Size	PA
SC	12h26.4m	+31°14'	10.9	4.8'x3.2'	155°

NGC 4414, H I 77, UGC 7539

A Herschel 400 Object
 Stellar nucleus

U2000 chart: 108, **Tirion chart:** 7, **H-B Astroatlas:** B9, C30. **NGC Description:** vB, L, E, g, vsmbM*, B diff N in B bulge. **Burnham's:** p. 665. **Luginbuhl & Skiff:** p. 83. **Deep Space CCD Atlas:** North p. 134.

Personal Notes:



NGC 4494

Type	R.A. (2000)	Dec	Mag.	Size	PA
E1	12h31.3m	+25°47'	10.7	4.5'x4.3'	

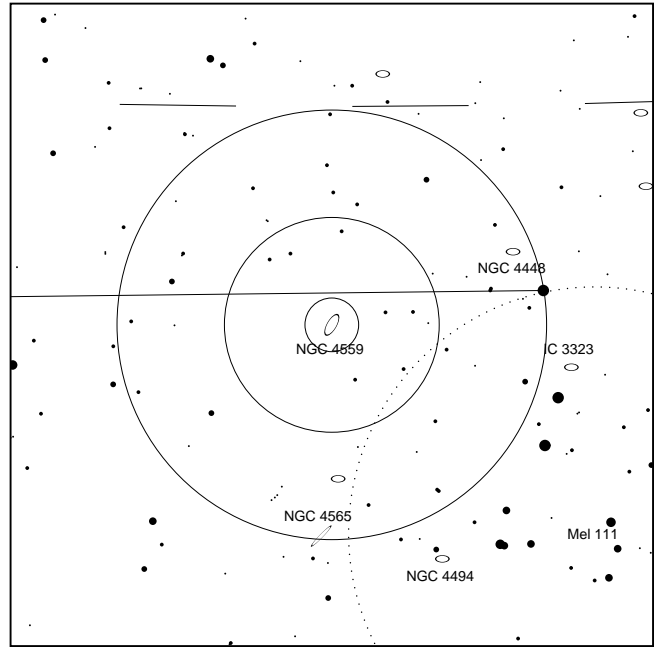
NGC 4494, H I 83, UGC 7662

A Herschel 400 Object

Small, compact

U2000 chart: 148, **Tirion chart:** 7, **H-B Astroatlas:** B9, C30. **NGC Description:** vB, pL, R, vsmbMN. **Burnham's:** p. 665. **Luginbuhl & Skiff:** p. 85. **Deep Space CCD Atlas:** North p. 137.

Personal Notes:



NGC 4559

Type	R.A. (2000)	Dec	Mag.	Size	PA
SC	12h35.9m	+27°58'	10.7	13.0'x5.2'	150°

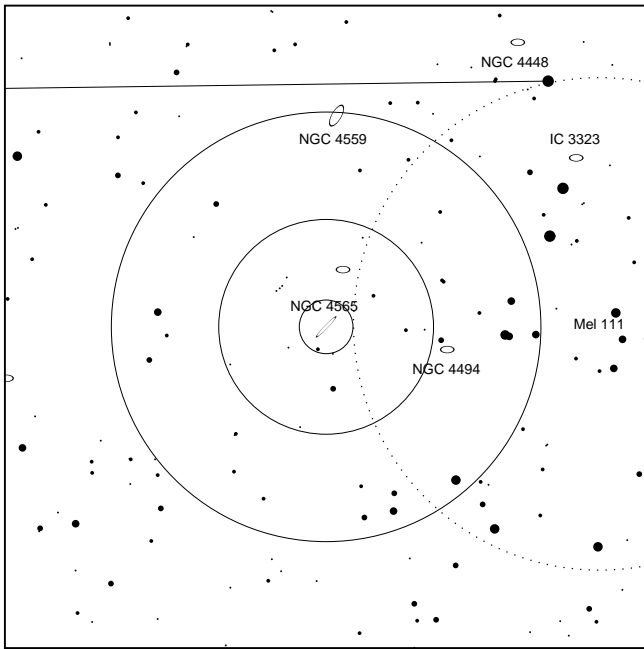
NGC 4559, H I 92, C 36, UGC 7766

A Herschel 400 Object

Coarse structure

U2000 chart: 149, **Tirion chart:** 7, **H-B Astroatlas:** B9, C30. **NGC Description:** vB, vL, mE150, gbM, 3 * f. **SAC DB Notes:** SN 1941a, multi arm spiral. **Burnham's:** p. 665. **Luginbuhl & Skiff:** p. 85. **Deep Space CCD Atlas:** North p. 139.

Personal Notes:



NGC 4565

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	12h36.3m	+26°00'	10.3	15.5'x1.9'	136°

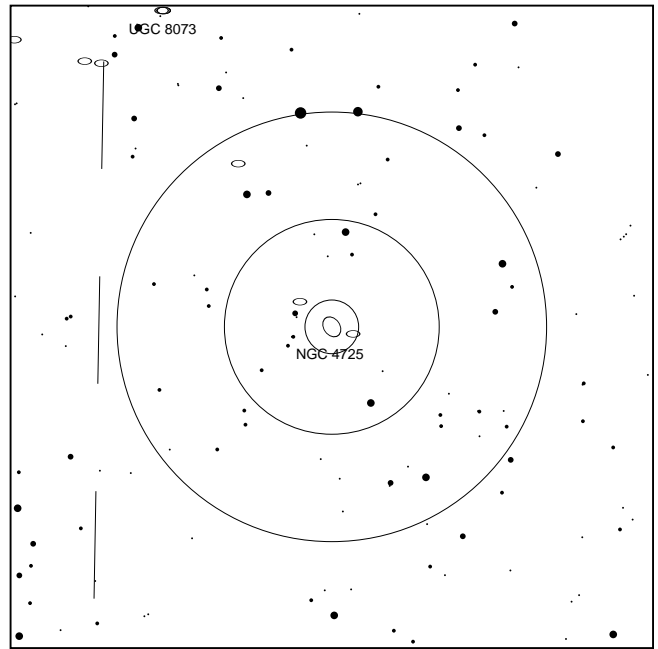
NGC 4565, H V 24, C 38, UGC 7772

A Herschel 400 Object

Superb edge-on, dust lane

U2000 chart: 149, **Tirion chart:** 7, **H-B AstroAtlas:** B9, C29. **NGC Description:** !!B, eL, eE135, vsbMN = *10-11. **SAC DB Notes:** NGC 4562 @ 13.4', classic edge-on galaxy. **Burnham's:** pp. 665, 688-9. **Luginbuhl & Skiff:** pp. 85-6. **Deep Space CCD Atlas:** North p. 140.

Personal Notes:



NGC 4725

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	12h50.4m	+25°33'	10.2	12.0'x9.0'	35°

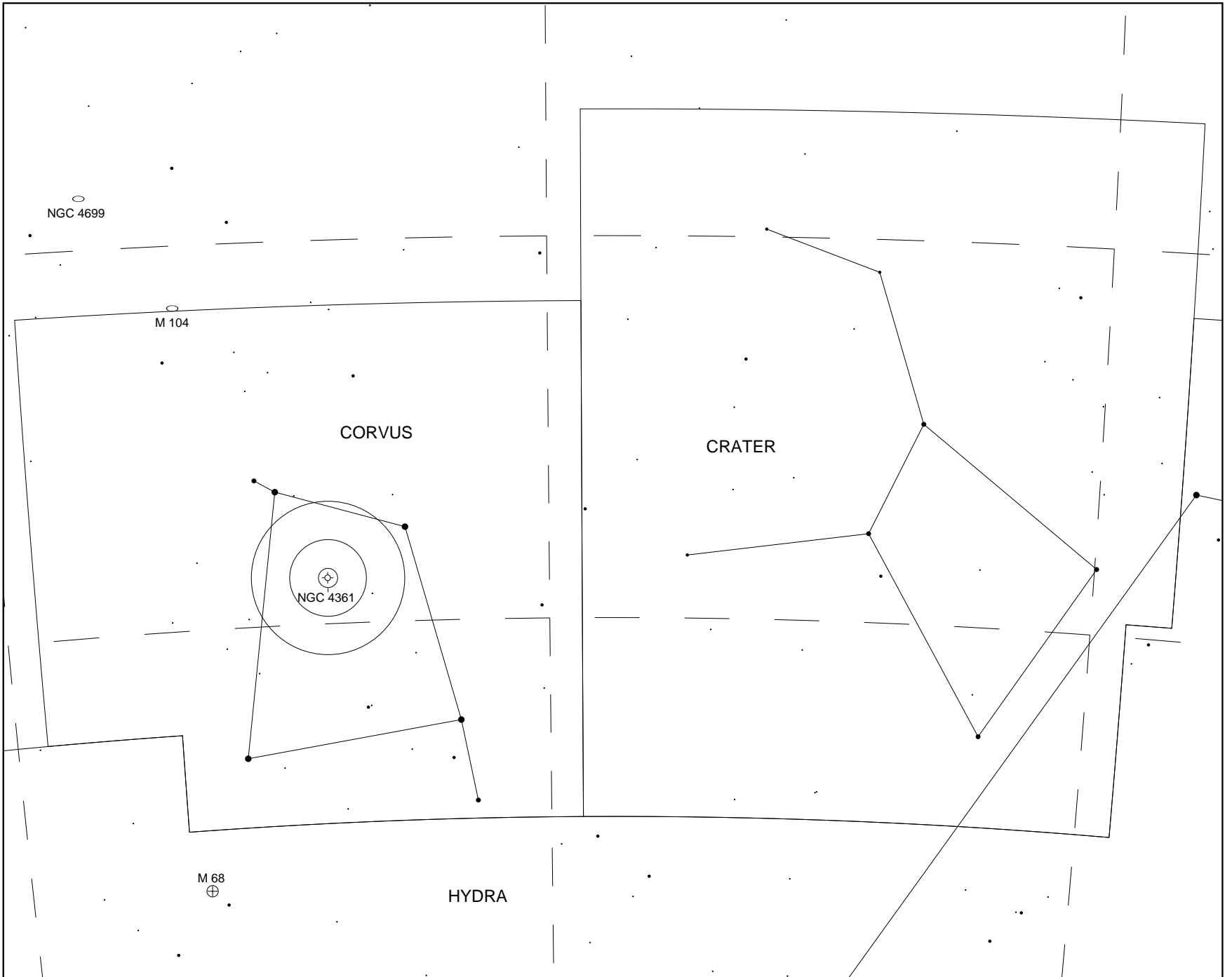
NGC 4725, H I 84, UGC 7989

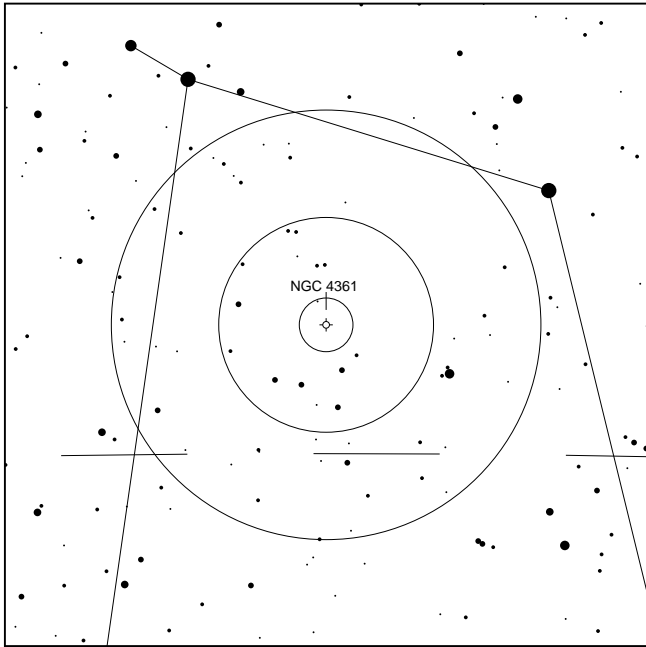
A Herschel 400 Object

Bright, large spiral

U2000 chart: 149, **Tirion chart:** 7, **H-B AstroAtlas:** B9, C29. **NGC Description:** vB, vL, E, vg, vsymbM, eBN. **SAC DB Notes:** P w NGC 4712 @ 12.0'. **Burnham's:** pp. 666, 692. **Luginbuhl & Skiff:** p. 86. **Deep Space CCD Atlas:** North p. 145.

Personal Notes:





NGC 4361

Type	R.A. (2000)	Dec	Mag.	Size
PN	12h24.5m	-18°48'	10.3	80''

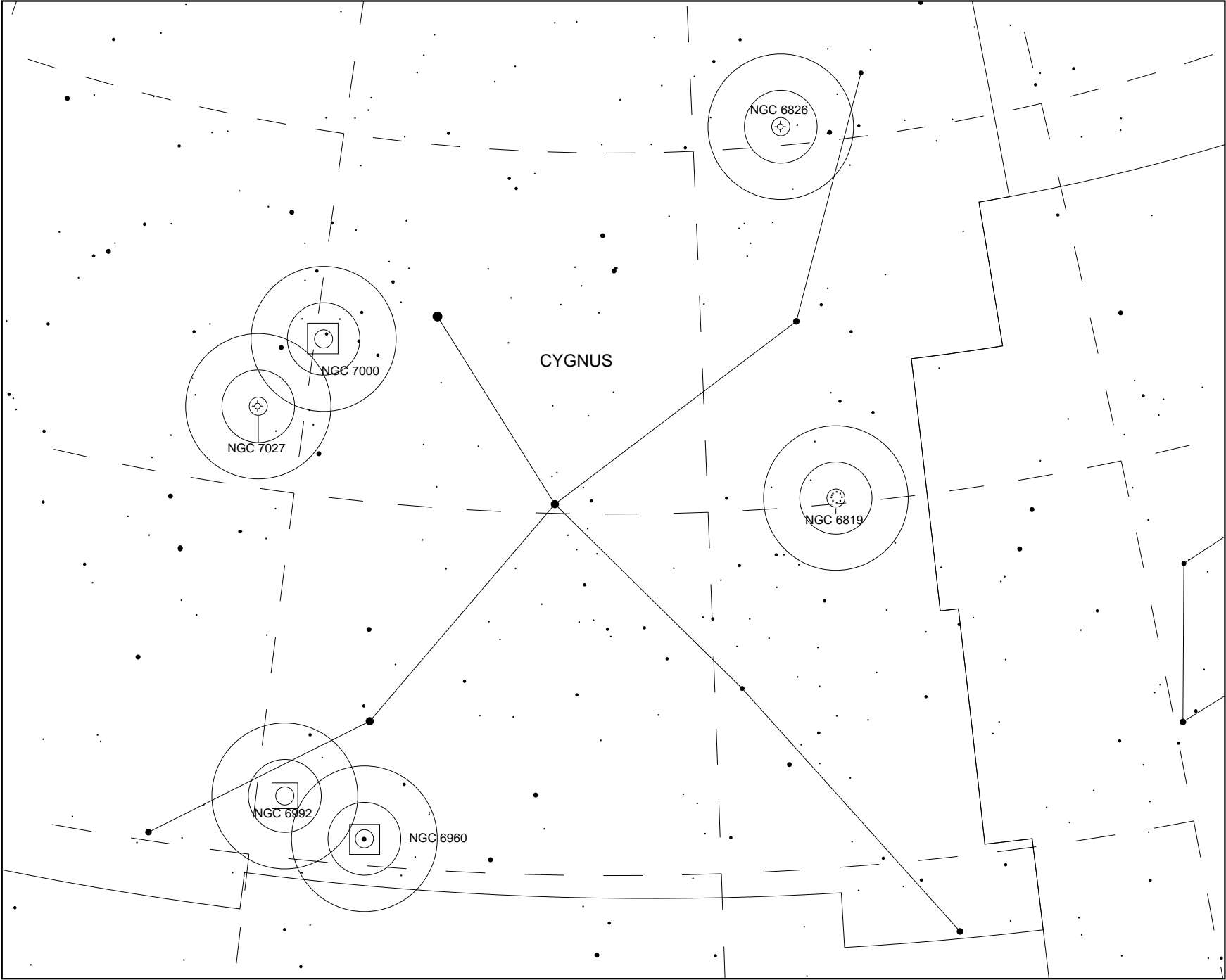
NGC 4361, H I 65, PK294+43.1

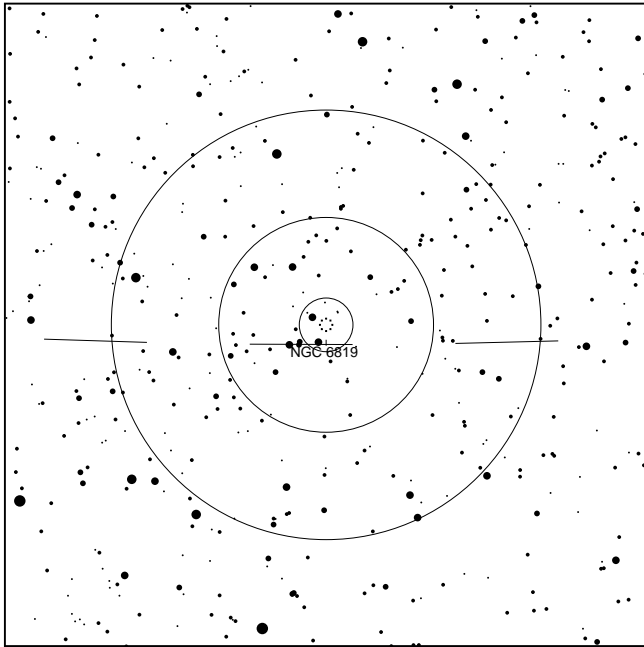
A Herschel 400 Object

Small, bright

U2000 chart: 328, **Tirion chart:** 13, **H-B Astroatlas:** B10, C66. **NGC Description:** vB, L, R, vsmbMN, r.
Burnham's: p. 717. **Luginbuhl & Skiff:** p. 93. **Deep Space CCD Atlas:** North p. 132.

Personal Notes:





NGC 6819

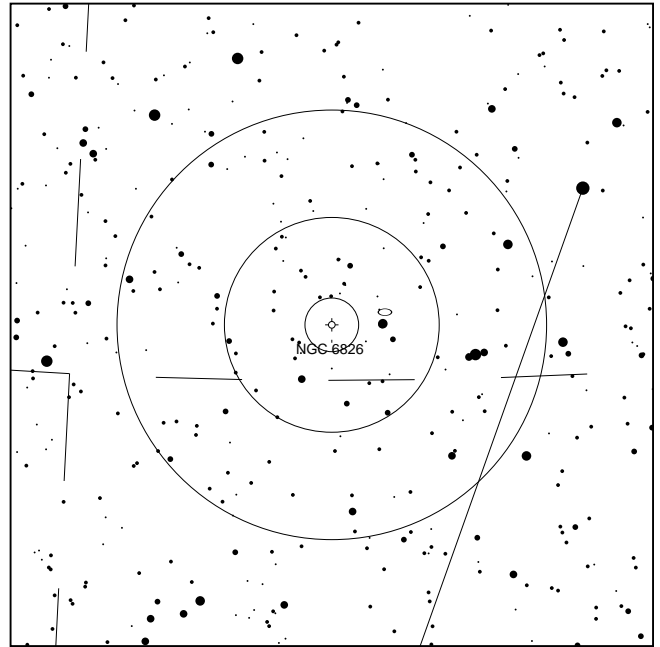
Type	R.A. (2000)	Dec	Mag.	Size
OC	19h41.3m	+40°11'	7.3	5.0'

NGC 6819

Rich, 150*

U2000 chart: 84, **Tirion chart:** 8, **H-B Astroatlas:** B5, C24, D8. **NGC Description:** Cl, vL, vRi, *11...15. **SAC DB Notes:** 150 stars mags 11-16. **Burnham's:** p. 748. **Luginbuhl & Skiff:** p. 97. **Deep Space CCD Atlas:** North p. 207.

Personal Notes:



NGC 6826

Type	R.A. (2000)	Dec	Mag.	Size
PN	19h44.8m	+50°31'	8.8	27"x24"

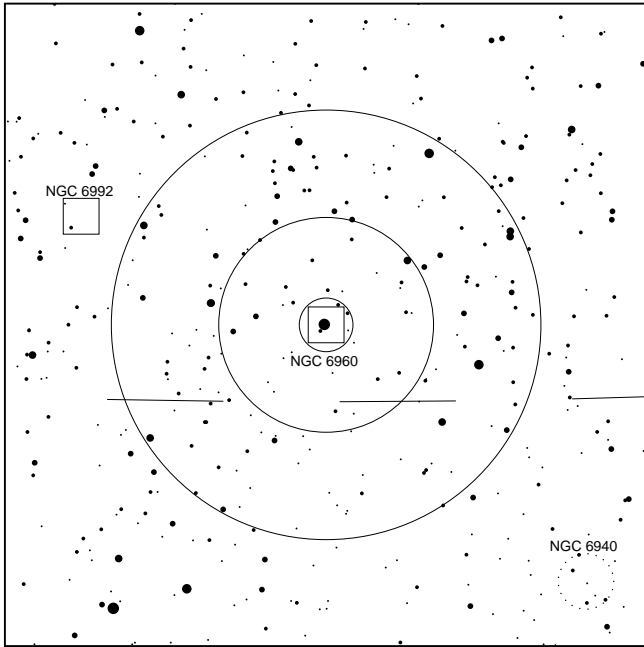
NGC 6826, H IV 73, PK83+12.1, C 15

A Herschel 400 Object

Blinking PN, 10 mag *

U2000 chart: 55, **Tirion chart:** 3, **H-B Astroatlas:** B5, C6. **NGC Description:** Planetary, B, pL, R, *11m. **SAC DB Notes:** Blinking Planetary. **Burnham's:** p. 748. **Luginbuhl & Skiff:** p. 97. **Deep Space CCD Atlas:** North p. 208.

Personal Notes:



NGC 6960

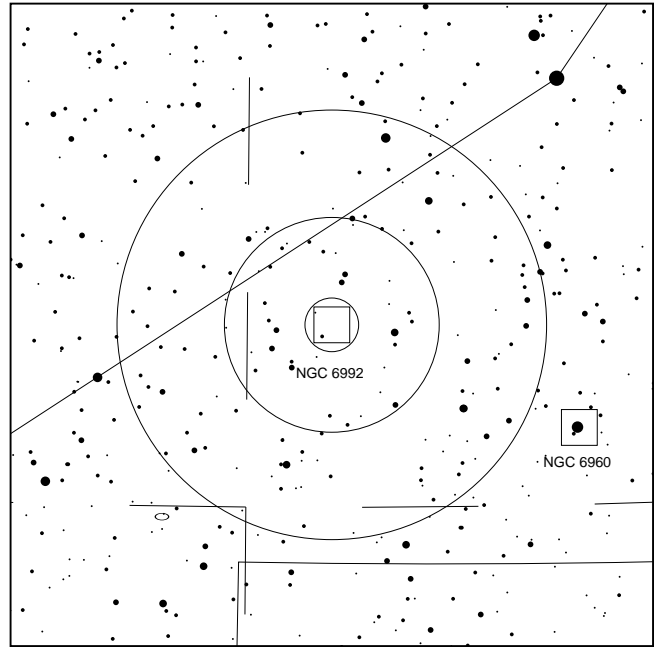
Type	R.A. (2000)	Dec	Mag.	Size
EN	20h45.6m	+30°43'	—	70'x6'

NGC 6960, H V 15, Veil Nebula West, C 34

Veil, west half

U2000 chart: 120, **Tirion chart:** 9, **H-B Astroatlas:** B5, C23, D8. **NGC Description:** pB, cL, eiF, Kappa Cyg invl. **SAC DB Notes:** Veil Nebula western part,* 52 CYG invl. **Burnham's:** pp. 748, 801-11. **Luginbuhl & Skiff:** p. 99. **Deep Space CCD Atlas:** North p. 227.

Personal Notes:



NGC 6992

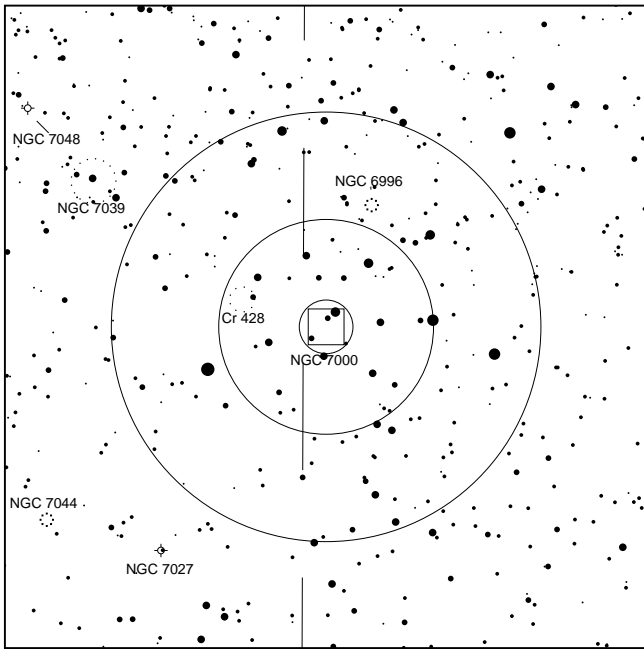
Type	R.A. (2000)	Dec	Mag.	Size
EN	20h56.3m	+31°42'	—	60'x8'

NGC 6992, H V 14, Veil Nebula East, C 33

Veil, east, use UHC

U2000 chart: 120, **Tirion chart:** 9, **H-B Astroatlas:** B5, C23. **NGC Description:** eF, eL, eE, eiF, Bifid. **SAC DB Notes:** Veil Nebula eastern part. **Burnham's:** pp. 748, 801-11. **Luginbuhl & Skiff:** p. 99. **Deep Space CCD Atlas:** North p. 228.

Personal Notes:



NGC 7000

Type	R.A. (2000)	Dec	Mag.	Size
EN	20h58.8m	+44°20'	—	120'x100'

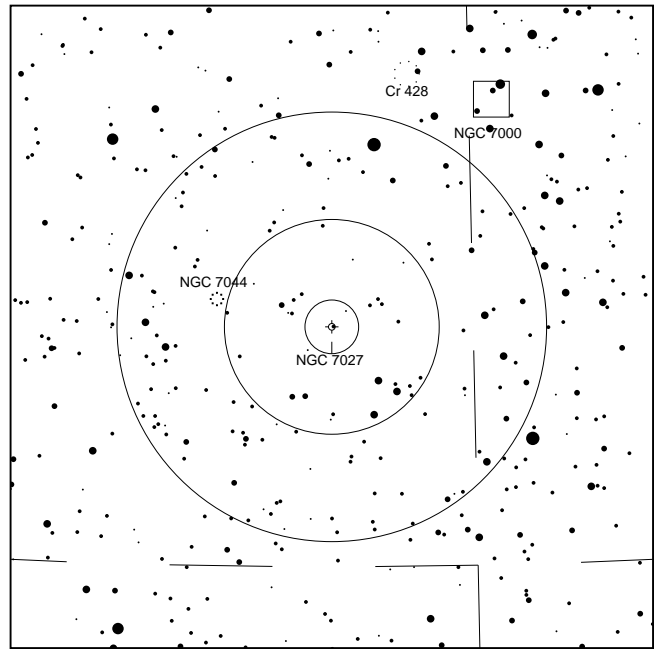
NGC 7000, H V 37?, North America Nebula, C 20

A Herschel 400 Object

Use low power

U2000 chart: 85, **Tirion chart:** 9, **H-B Astroatlas:** B5, C23, D7. **NGC Description:** F, eeL, dif nebulosity. **SAC DB Notes:** C1 NGC 6997 incl. **Burnham's:** pp. 749, 811-4. **Luginbuhl & Skiff:** p. 99. **Deep Space CCD Atlas:** North p. 230.

Personal Notes:



NGC 7027

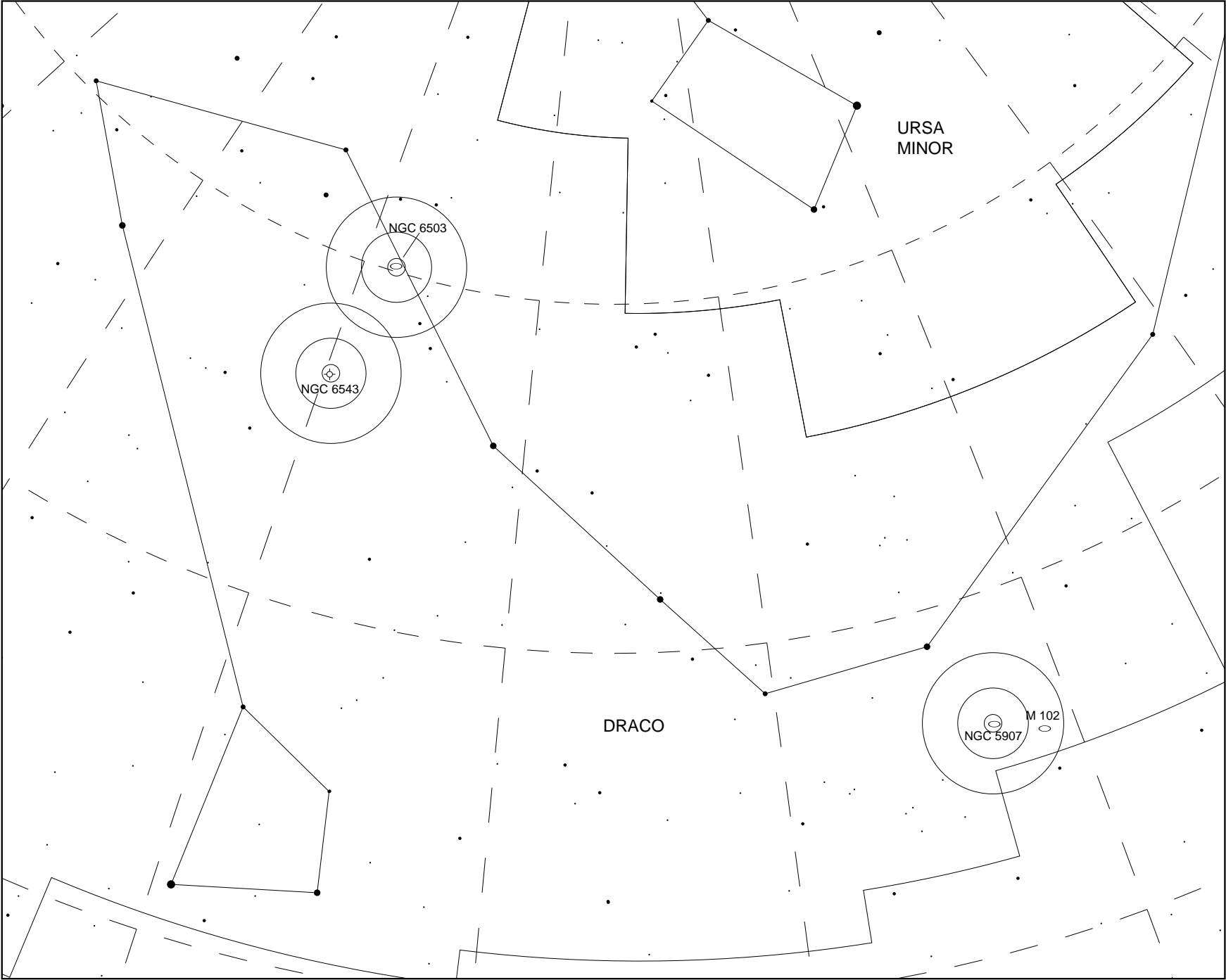
Type	R.A. (2000)	Dec	Mag.	Size
PN	21h07.1m	+42°14'	9.6	18"x11"

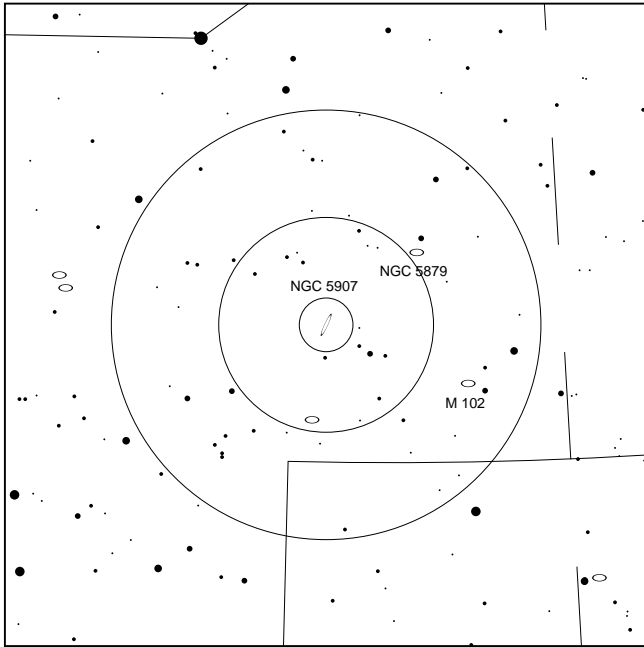
NGC 7027, PK84-3.1

Proto-planetary, unique

U2000 chart: 85, **Tirion chart:** 9, **H-B Astroatlas:** B5, C23, D7. **NGC Description:** eB, S. **SAC DB Notes:** May be compact H II region, bizarre spectrum. **Burnham's:** p. 749. **Luginbuhl & Skiff:** p. 99. **Deep Space CCD Atlas:** North p. 231.

Personal Notes:





NGC 5907

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	15h15.9m	+56°19'	11.4	12.8'x1.8'	155°

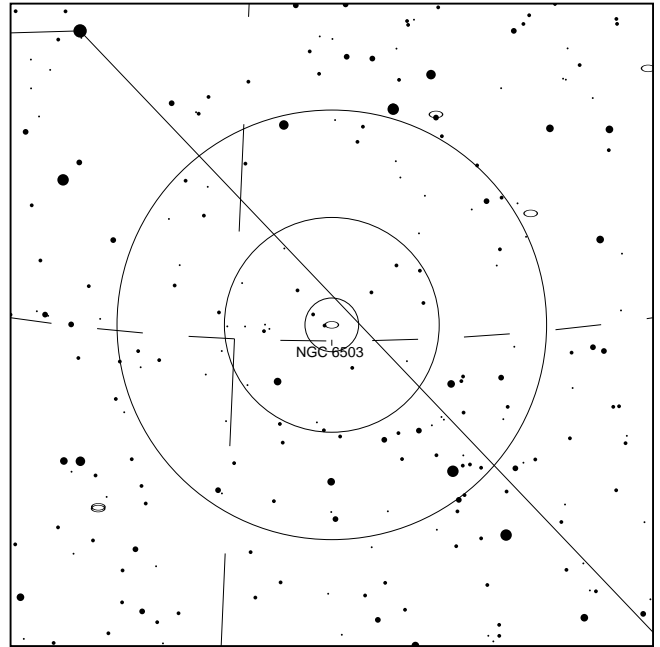
NGC 5907, H II 759, UGC 9801

A Herschel 400 Object

Fine edge-on, dust lane

U2000 chart: 50, **Tirion chart:** 2, **H-B Astroatlas:** B1, C10. **NGC Description:** cB, vL, vmE155, vgBMN. **SAC DB Notes:** vs bulge nearly hidden by strong dk lane, SN 1940a. **Burnham's:** pp. 860, 874. **Luginbuhl & Skiff:** pp. 106-7. **Deep Space CCD Atlas:** North p. 163.

Personal Notes:



NGC 6503

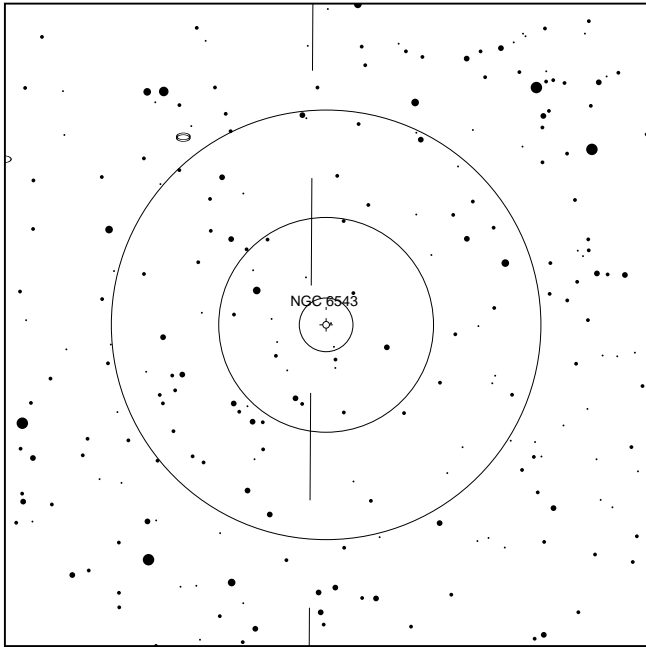
Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	17h49.4m	+70°09'	11.5	8'x2.6'	123°

NGC 6503, UGC 11012

Bright, elongated

U2000 chart: 30, **Tirion chart:** 3, **H-B Astroatlas:** B1, C8. **NGC Description:** pF, L, mE, *9f4'. **Burnham's:** p. 861. **Luginbuhl & Skiff:** p. 107. **Deep Space CCD Atlas:** North p. 180.

Personal Notes:



NGC 6543

Type	R.A. (2000)	Dec	Mag.	Size
PN	17h58.6m	+66°38'	8.3	22"x16"

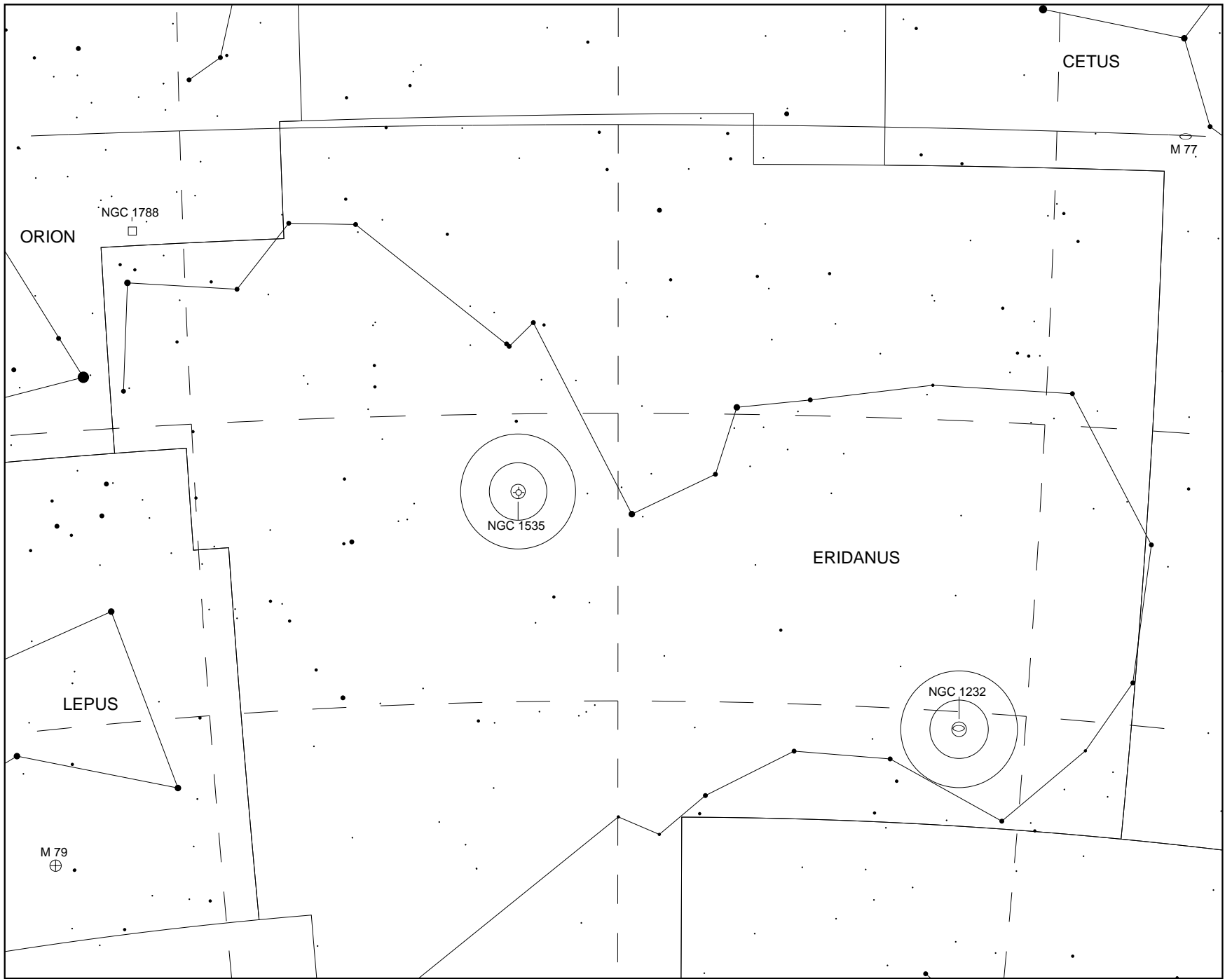
**NGC 6543, H IV 37, Cat's Eye Nebula,
PK96+29.1, C 6**

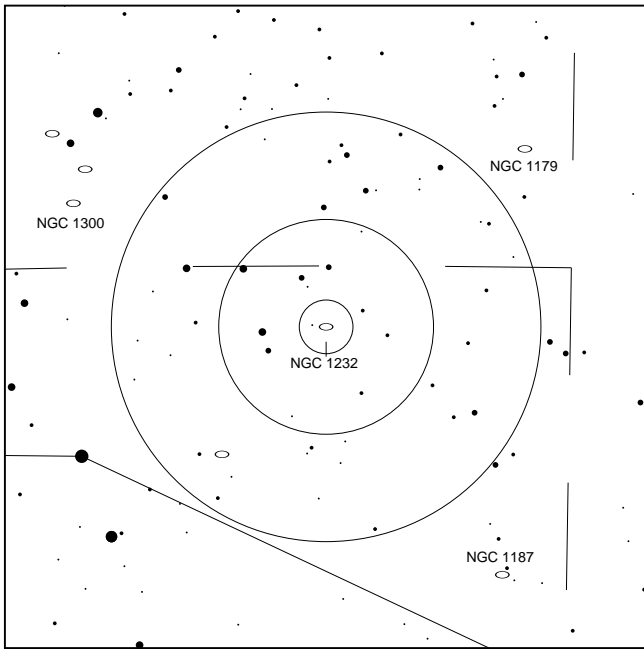
A Herschel 400 Object

11th mag central*

U2000 chart: 30, Tirion chart: 3, H-B Astroatlas:
B1, C8. **NGC Description:** vB, pS, sbMvSN. **Burn-**
ham's: pp. 861, 870-2, 194 (par. 2). **Luginbuhl & Skiff:**
p. 107-8. **Deep Space CCD Atlas: North** p. 182.

Personal Notes:





NGC 1232

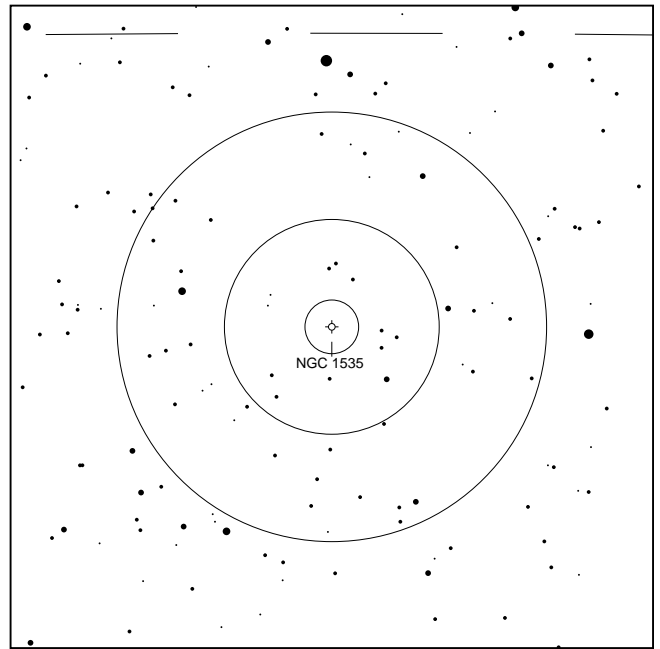
Type	R.A. (2000)	Dec	Mag.	Size	PA
Sc	03h09.7m	-20°34'	10.5	8'x7'	108°

NGC 1232, H II 258, MCG-4-08-032

Face-on spiral

U2000 chart: 311, **Tirion chart:** 18, **H-B Astroatlas:** B14, C73, D39. **NGC Description:** pB, cL, R, gbM, r. **SAC DB Notes:** Excellent face-on spiral. **Burnham's:** pp. 885, 892. **Luginbuhl & Skiff:** p. 110. **Deep Space CCD Atlas:** North p. 33. South p. 20.

Personal Notes:



NGC 1535

Type	R.A. (2000)	Dec	Mag.	Size
PN	04h14.2m	-12°44'	10.4	20"x17"

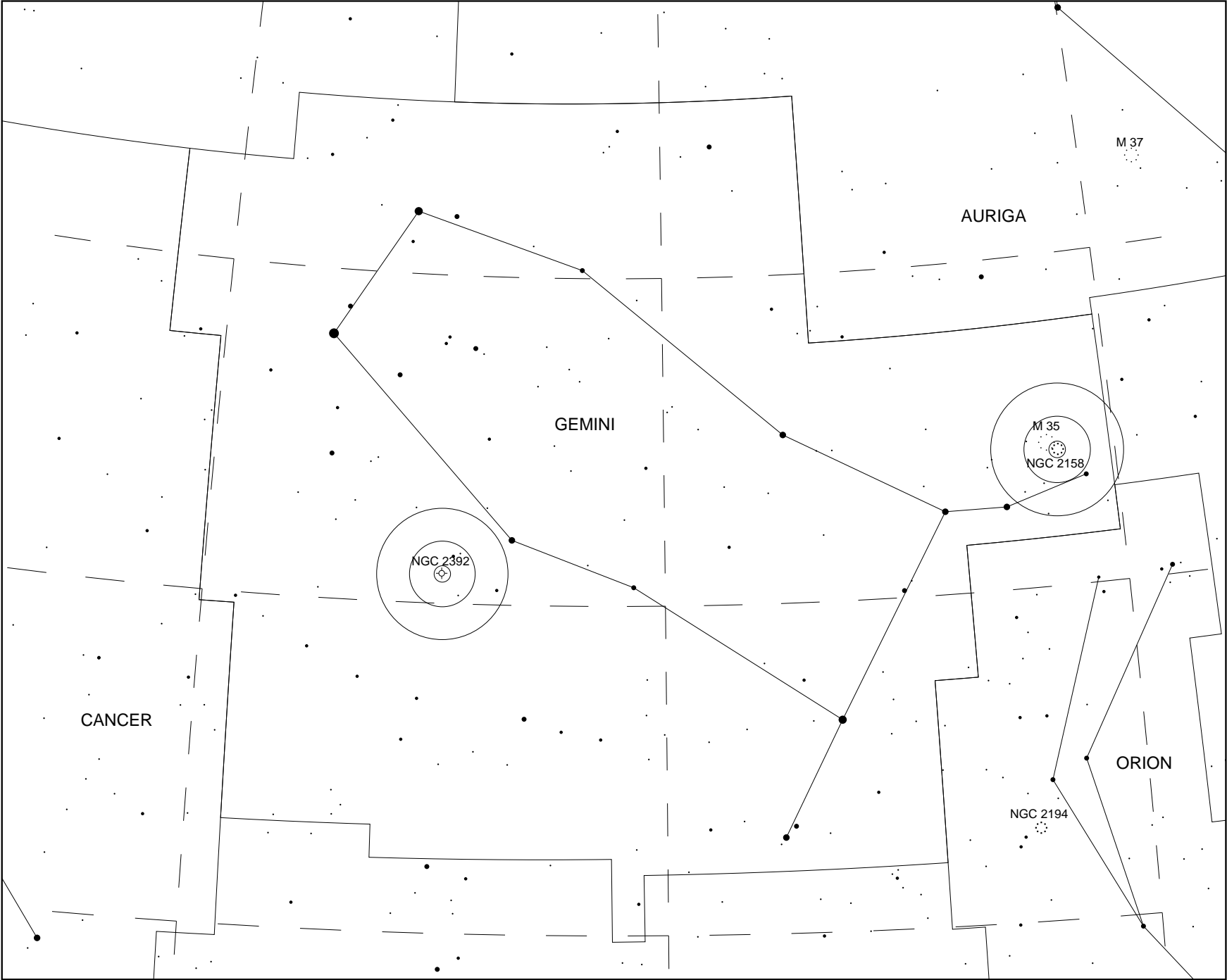
NGC 1535, H IV 26, PK206-40.1

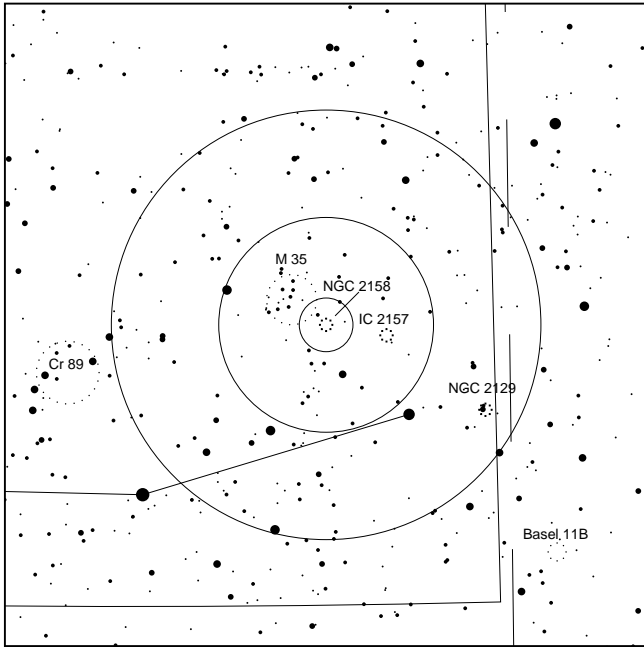
A Herschel 400 Object

Bright bluish disk

U2000 chart: 268, **Tirion chart:** 11, **H-B Astroatlas:** B14, C54. **NGC Description:** vB, S, R, pS, vsbM, r. **Burnham's:** p. 887. **Luginbuhl & Skiff:** p. 113. **Deep Space CCD Atlas:** North p. 41.

Personal Notes:





NGC 2158

Type	R.A. (2000)	Dec	Mag.	Size
OC	06h07.5m	+24°06'	8.6	5.0'

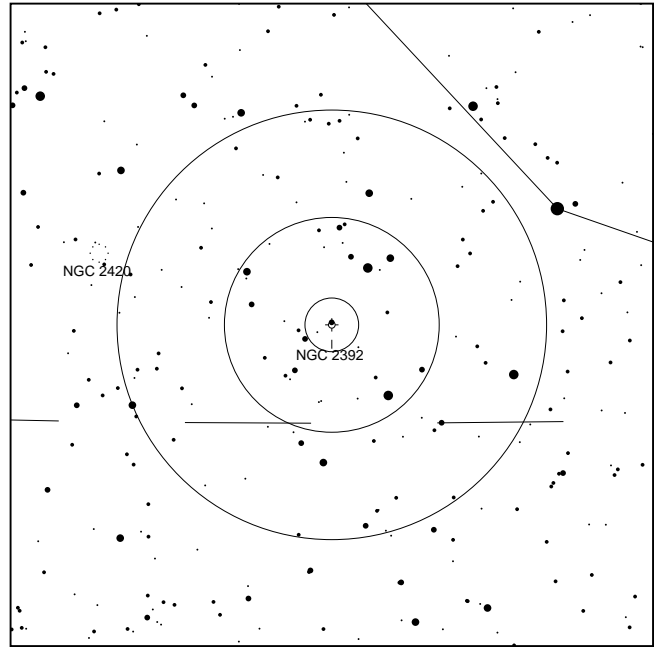
NGC 2158, H VI 17

A Herschel 400 Object

Near M35, compact

U2000 chart: 136, **Tirion chart:** 5, **H-B AstroAtlas:** B11, C34. **NGC Description:** Cl, pS, mC, vRi, irr triangle * eS. **SAC DB Notes:** 150 F* on edge of M 35. **Burnham's:** pp. 911, 939-40, 942. **Luginbuhl & Skiff:** p. 121. **Deep Space CCD Atlas:** North p. 59.

Personal Notes:



NGC 2392

Type	R.A. (2000)	Dec	Mag.	Size
PN	07h29.2m	+20°55'	8.6	47"x43"

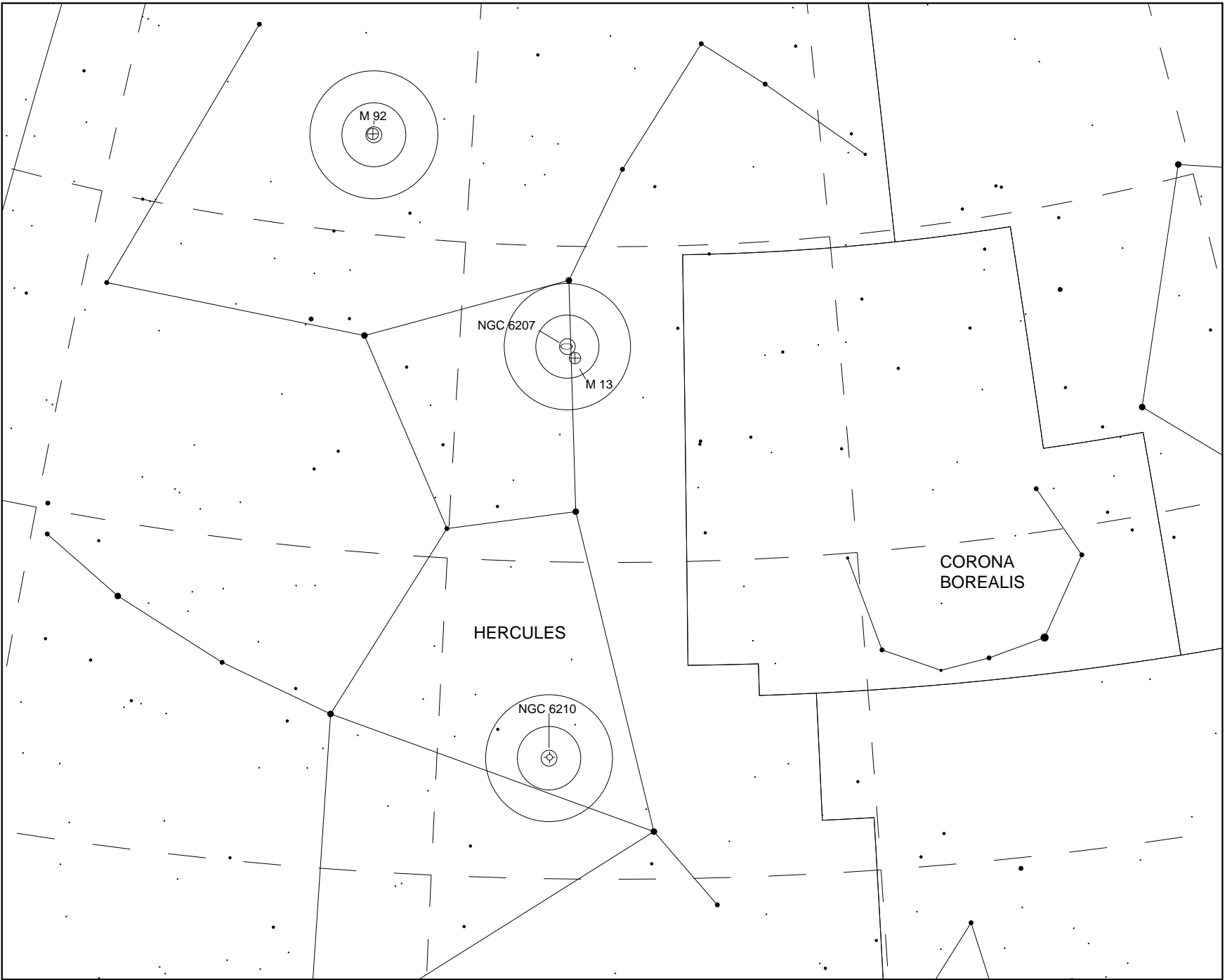
NGC 2392, H IV 45, Clown Face Nebula, Eskimo Nebula, PK197+17.1, C 39

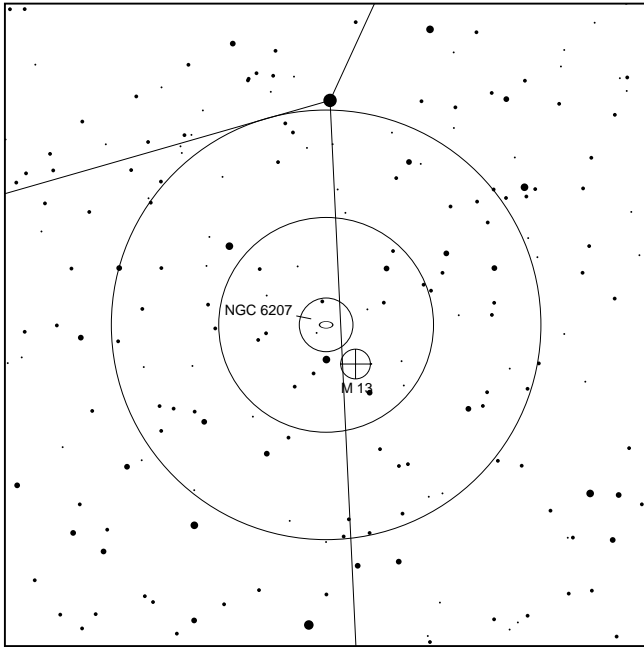
A Herschel 400 Object

Use high power

U2000 chart: 139, **Tirion chart:** 5, **H-B AstroAtlas:** B11, C33. **NGC Description:** B, S, R, *9M, *8 nf 100". **SAC DB Notes:** sev shells. **Burnham's:** pp. 911, 940-3. **Luginbuhl & Skiff:** p. 123. **Deep Space CCD Atlas:** North p. 80.

Personal Notes:





NGC 6207

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sc	16h43.1m	+36°50'	12.5	3.3'x1.2'	15°

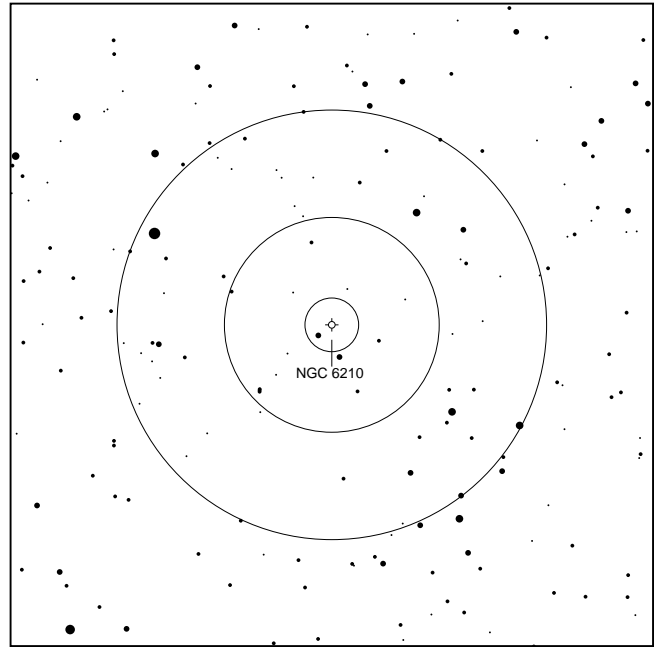
NGC 6207, H II 701, UGC 6207

A Herschel 400 Object

No definite nucleus

U2000 chart: 114, **Tirion chart:** 8, **H-B Astroatlas:** B7, C26. **NGC Description:** pB, pL, E45, vgmbM. **SAC DB Notes:** No def nucleus, B * nr center, 30' NE from M 13. **Burnham's:** pp. 959, 979. **Luginbuhl & Skiff:** p. 126. **Deep Space CCD Atlas:** North p. 172.

Personal Notes:



NGC 6210

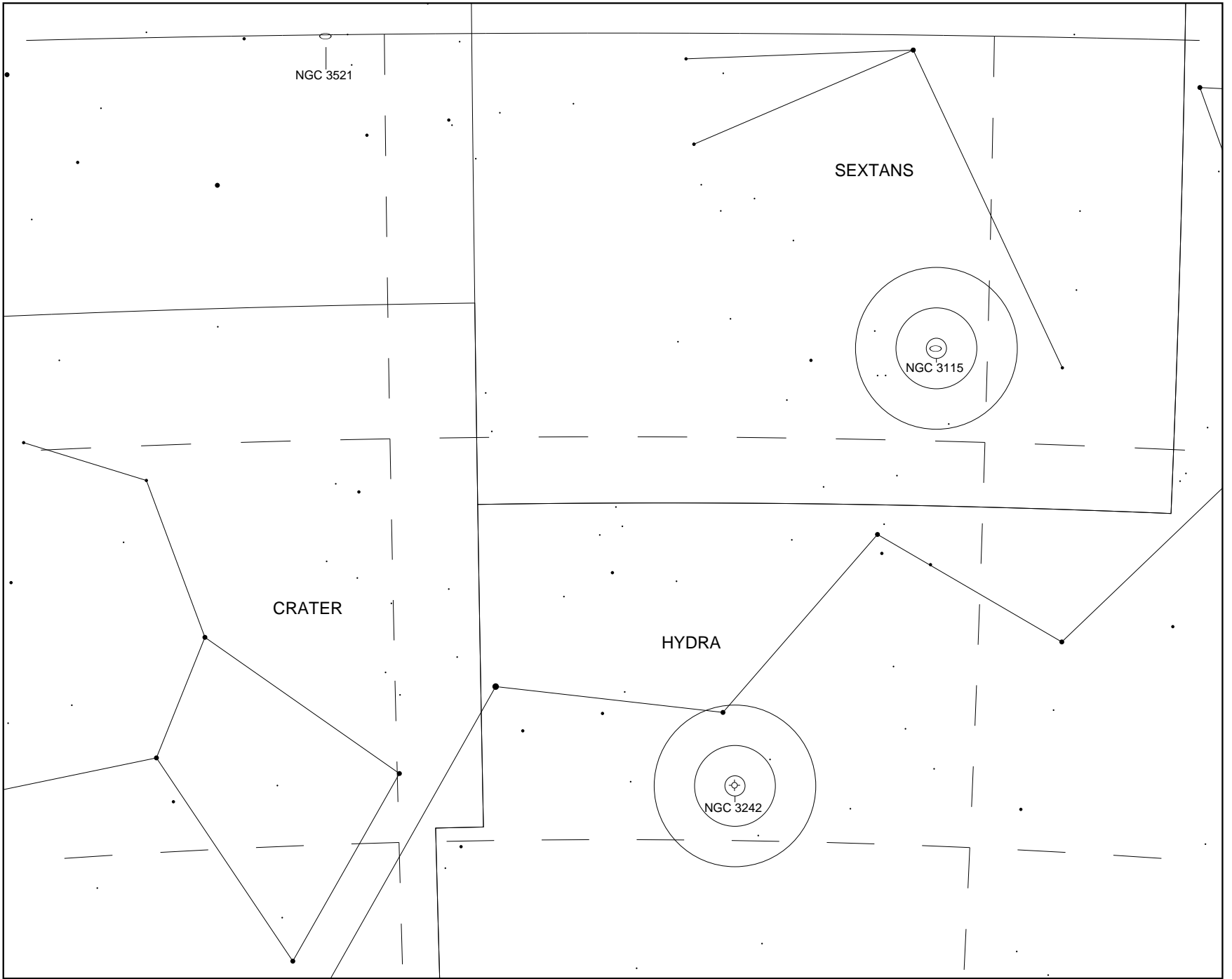
Type	R.A. (2000)	Dec	Mag.	Size
PN	16h44.5m	+23°49'	9.7	20''x13''

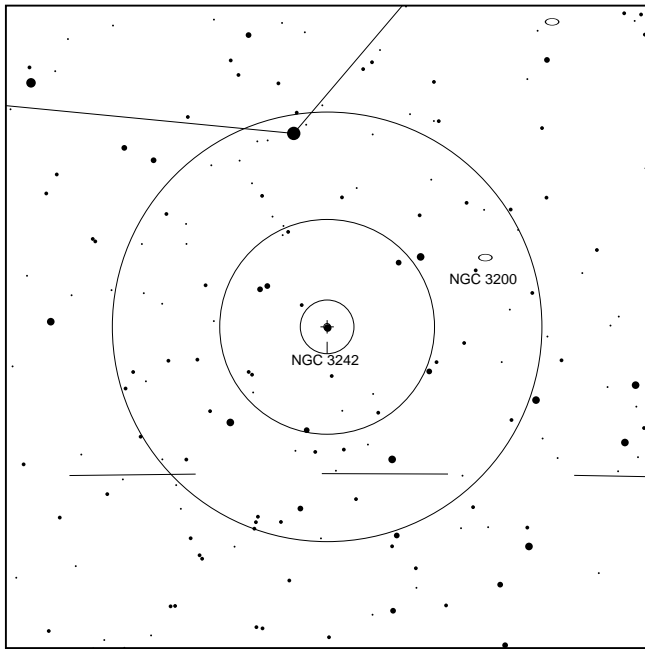
NGC 6210, PK43+37.1

Small, bluish

U2000 chart: 156, **Tirion chart:** 8, **H-B Astroatlas:** B7, C26. **NGC Description:** vB, vS, R, disc. **Burnham's:** p. 959. **Luginbuhl & Skiff:** p. 126. **Deep Space CCD Atlas:** North p. 173.

Personal Notes:





NGC 3242

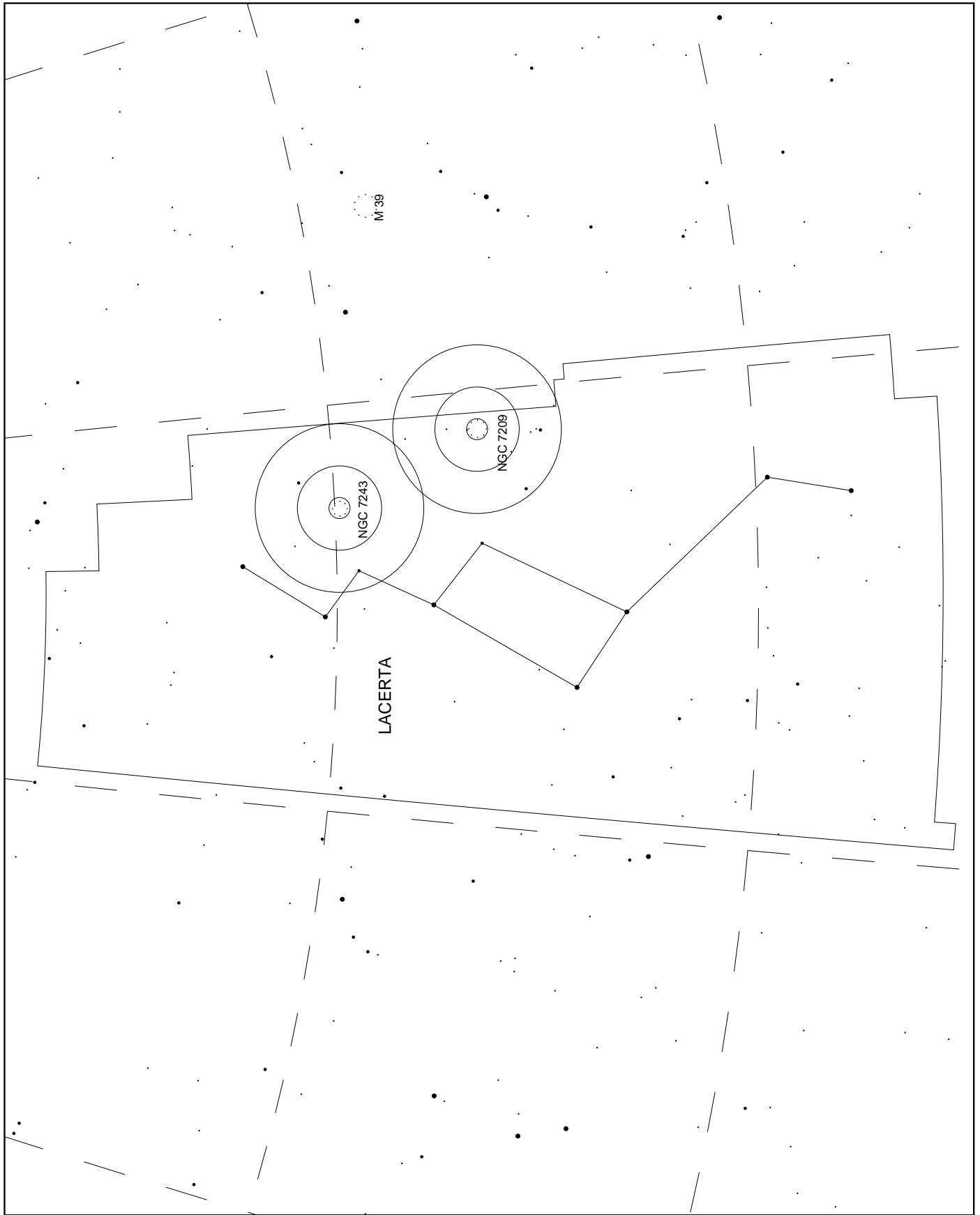
Type	R.A. (2000)	Dec	Mag.	Size
PN	10h24.8m	-18°38'	8.6	40"x35"

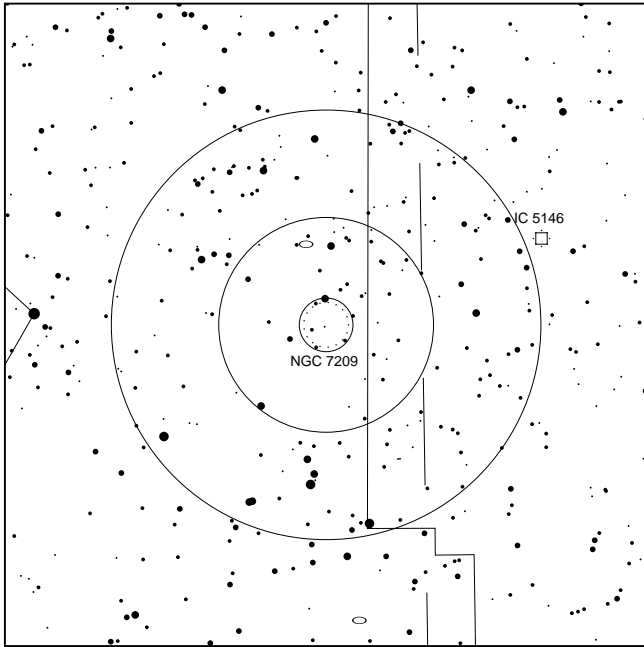
**NGC 3242, H IV 27, Ghost of Jupiter,
PK261+32.1, C 59**

A Herschel 400 Object

U2000 chart: 325, **Tirion chart:** 13, **H-B Astroatlas:** B10, C67. **NGC Description:** ! vB, IE 147, 45" d, blue.
Burnham's: pp. 1009, 1028-9. **Luginbuhl & Skiff:** pp. 131-2. **Deep Space CCD Atlas:** North p. 106.

Personal Notes:





NGC 7209

Type	R.A. (2000)	Dec	Mag.	Size
OC	22h05.2m	+46°30'	6.7	25.0'

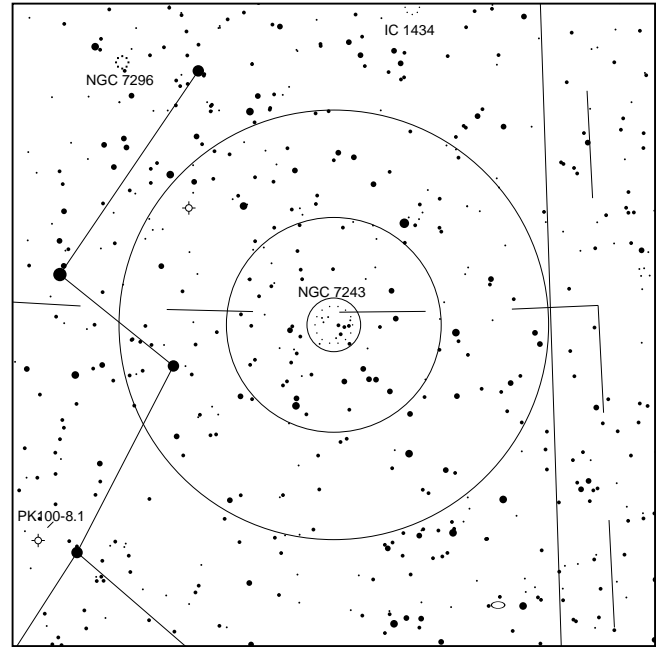
NGC 7209, H VII 53

A Herschel 400 Object

50*

U2000 chart: 87, **Tirion chart:** 9, **H-B AstroAtlas:** B3, C4. **NGC Description:** Cl, L, cRi, , pC, st9...12. **Burnham's:** p. 1043. **Luginbuhl & Skiff:** p. 135. **Deep Space CCD Atlas:** North p. 240.

Personal Notes:



NGC 7243

Type	R.A. (2000)	Dec	Mag.	Size
OC	22h15.3m	+49°53'	6.4	21.0'

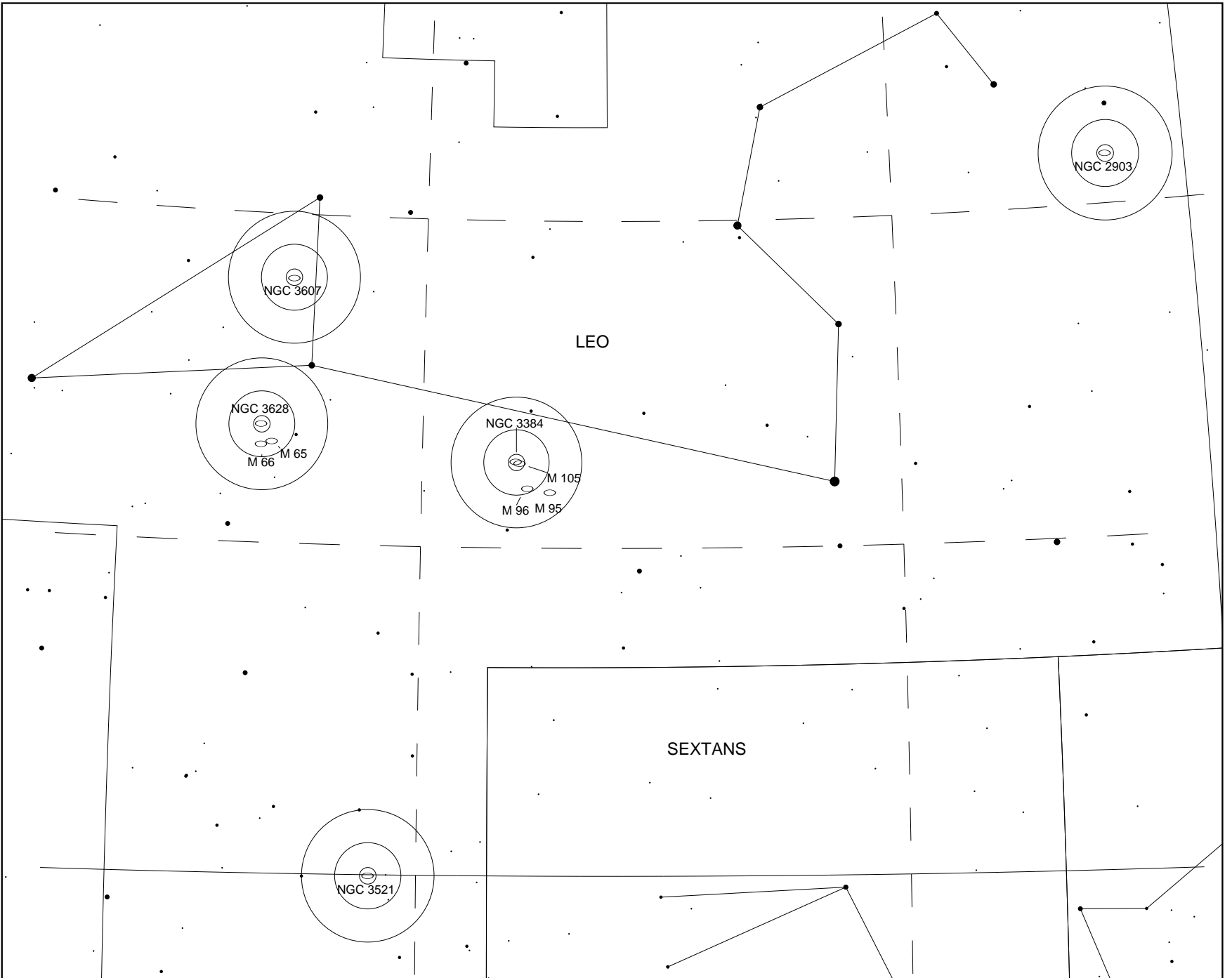
NGC 7243, H VIII 75, C 16

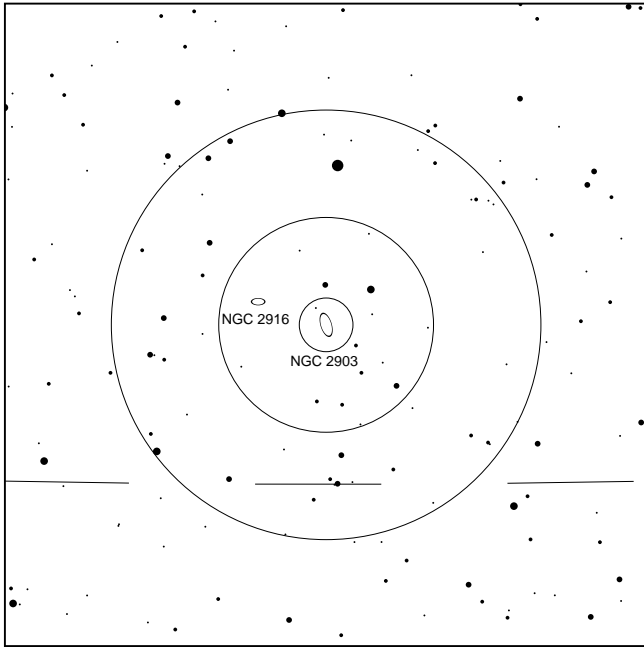
A Herschel 400 Object

40*

U2000 chart: 87, **Tirion chart:** 9, **H-B AstroAtlas:** B3, C4. **NGC Description:** Cl, L, P, lC, st vL. **SAC DB Notes:** Incl Struve 2890 D*. **Burnham's:** p. 1043. **Luginbuhl & Skiff:** pp. 135-6. **Deep Space CCD Atlas:** North p. 242.

Personal Notes:





NGC 2903

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	09h32.2m	+21°29'	10	13.3'x6.0'	17°

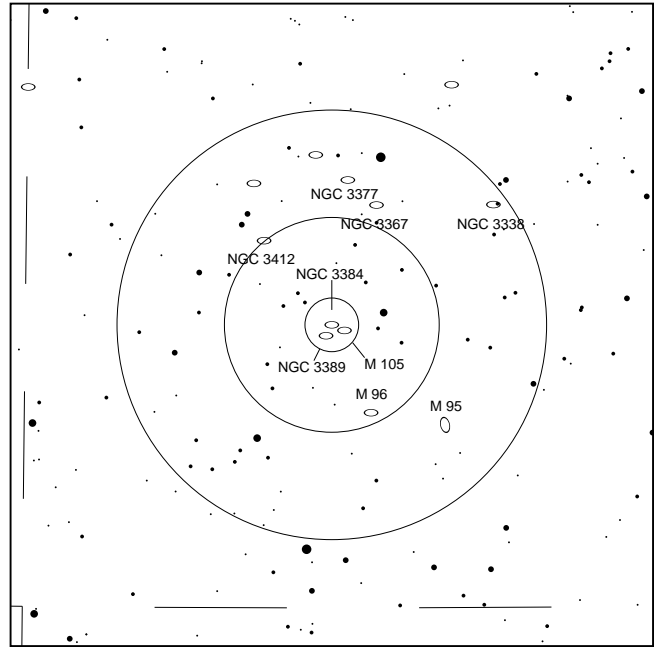
NGC 2903, H I 56, UGC 5079

A Herschel 400 Object

Bright, elongated

U2000 chart: 143, **Tirion chart:** 6, **H-B Astroatlas:** B11, C32. **NGC Description:** cB, vL, E, gmbM, r, sp of 2. **SAC DB Notes:** short B nucleus bar, fine multi arm spiral. **Burnham's:** pp. 1053, 1081. **Luginbuhl & Skiff:** p. 137. **Deep Space CCD Atlas:** North p. 99.

Personal Notes:



NGC 3384

Type	R.A. (2000)	Dec	Mag.	Size	PA
E7	10h48.3m	+12°38'	10	5.4'x2.8'	53°

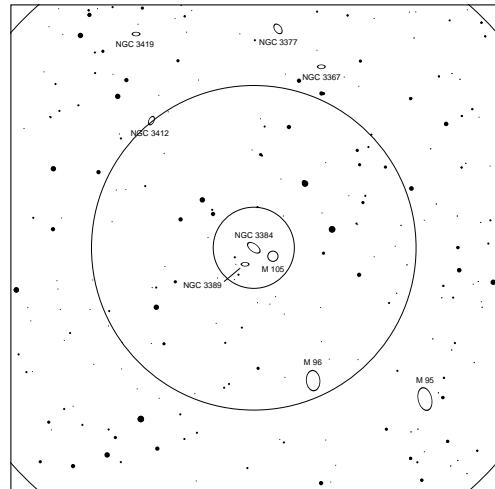
NGC 3384, H I 18, UGC 5911

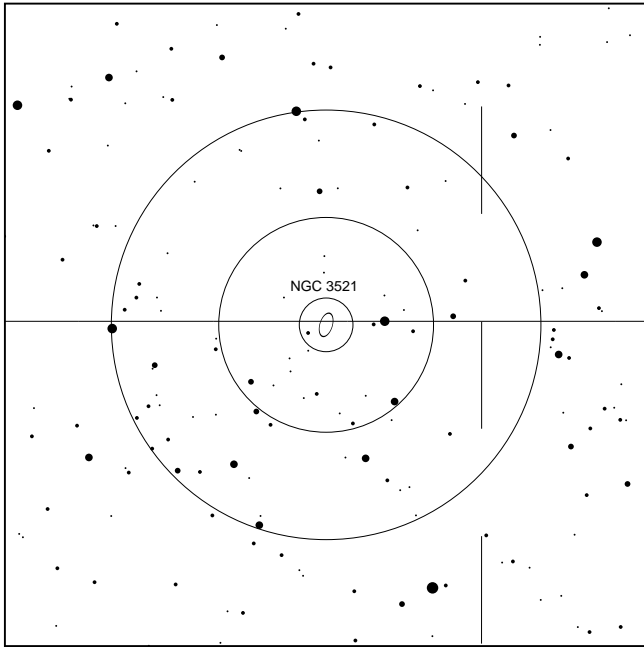
A Herschel 400 Object

In field of M105

U2000 chart: 190, **Tirion chart:** 13, **H-B Astroatlas:** B9, C49, D36. **NGC Description:** vB, L, R, psmbM, 2nd of 3. **SAC DB Notes:** Leo group; in triple group w NGC 3379 (M 105) and NGC 3389. **Burnham's:** p. 1054. **Luginbuhl & Skiff:** p. 140-1. **Deep Space CCD Atlas:** North p. 109.

Personal Notes:





NGC 3521

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sc	11h05.8m	-00°02'	10.1	13.5'x7.0'	163°

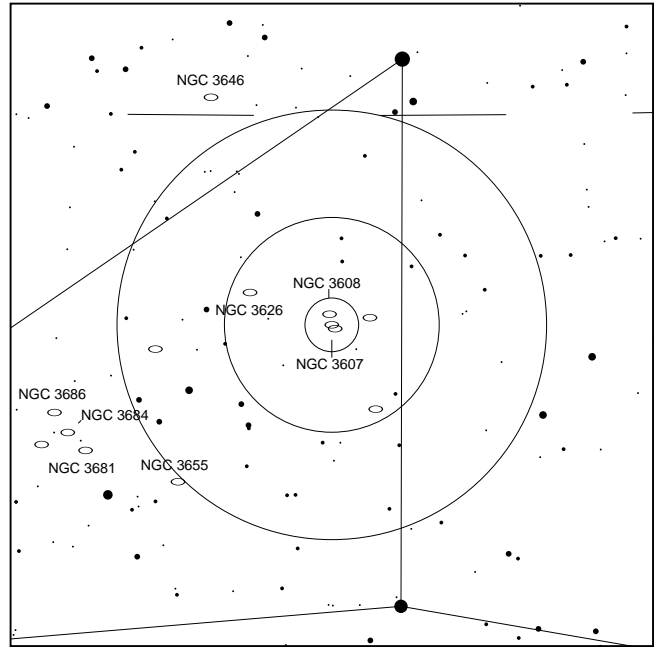
NGC 3521, H I 13, UGC 6150

A Herschel 400 Object

Large, bright

U2000 chart: 236, **Tirion chart:** 13, **H-B Astroatlas:** B9, C49. **NGC Description:** cB, cL, mE 140, vsmbMN. **Burnham's:** pp. 1055, 1082. **Luginbuhl & Skiff:** p. 142. **Deep Space CCD Atlas:** North p. 112. **South** p. 73.

Personal Notes:



NGC 3607

Type	R.A. (2000)	Dec	Mag.	Size	PA
E1	11h16.9m	+18°03'	10.2	4.5'x4.0'	120°

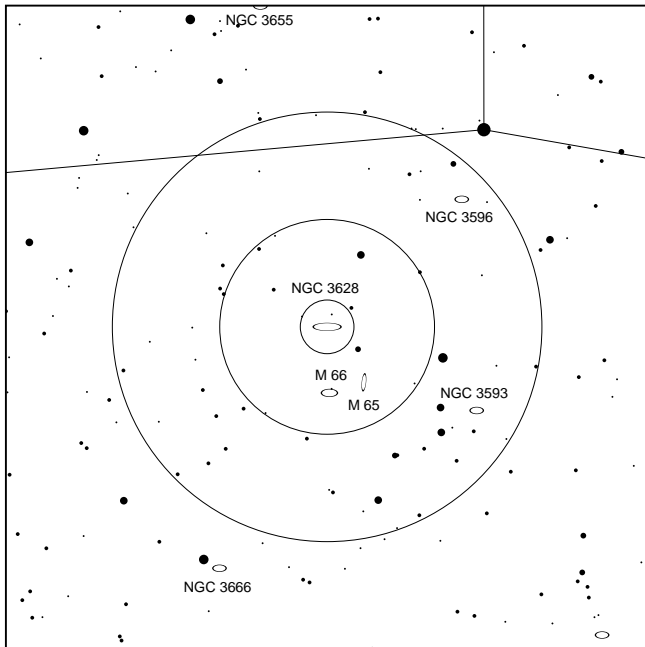
NGC 3607, H II 50, UGC 6297

A Herschel 400 Object

Other galaxies nearby

U2000 chart: 146, **Tirion chart:** 13, **H-B Astroatlas:** B9, C31, D36. **NGC Description:** vB, L, R, vmbM, 2nd of 3. **SAC DB Notes:** brightest in group, P w NGC 3608 at 6.2', PA10. **Burnham's:** p. 1055. **Luginbuhl & Skiff:** p. 142. **Deep Space CCD Atlas:** South p. 74.

Personal Notes:



NGC 3628

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	11h20.3m	+13°36'	11.5	15.5'x4.3'	104°

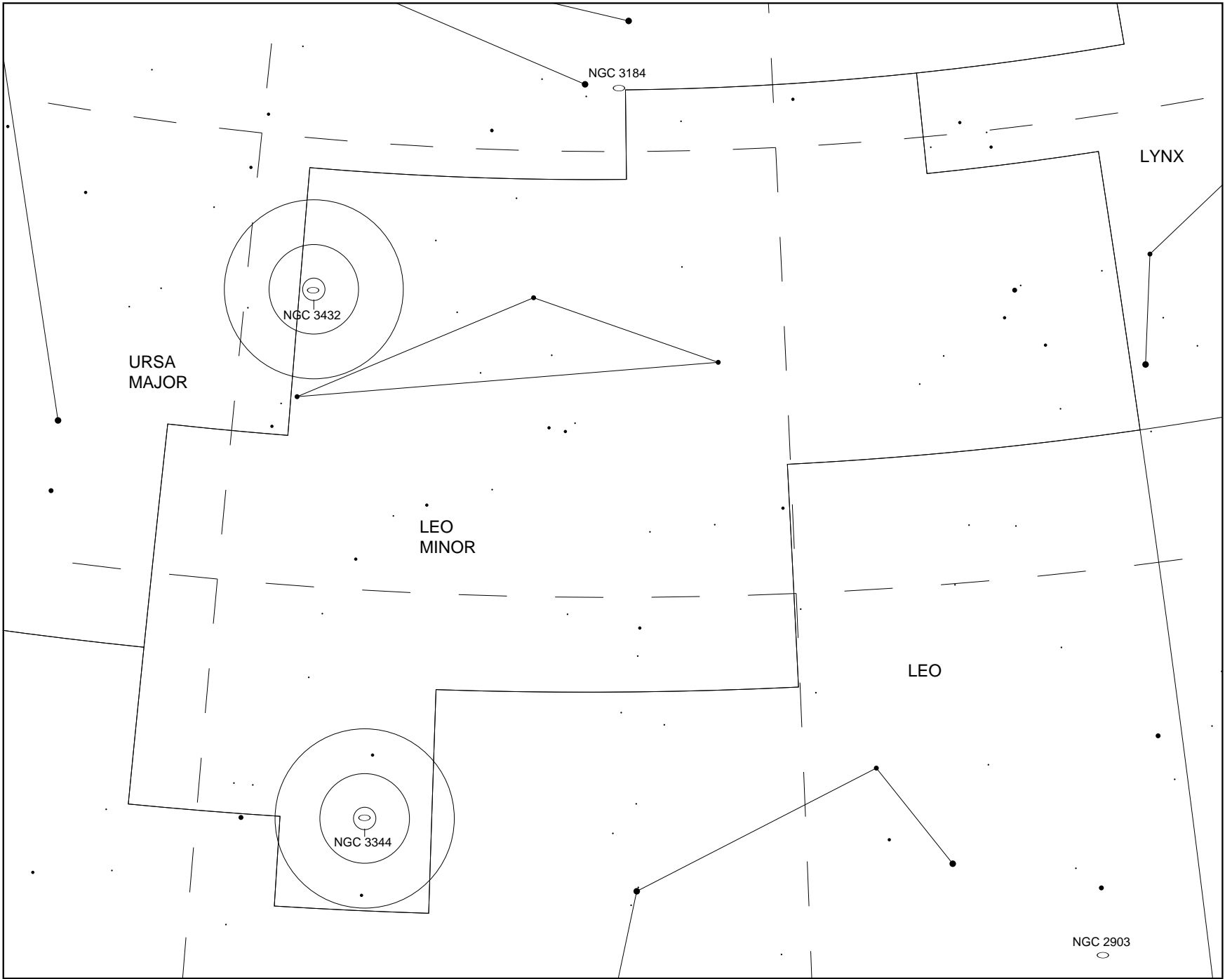
NGC 3628, H V 8, UGC 6350

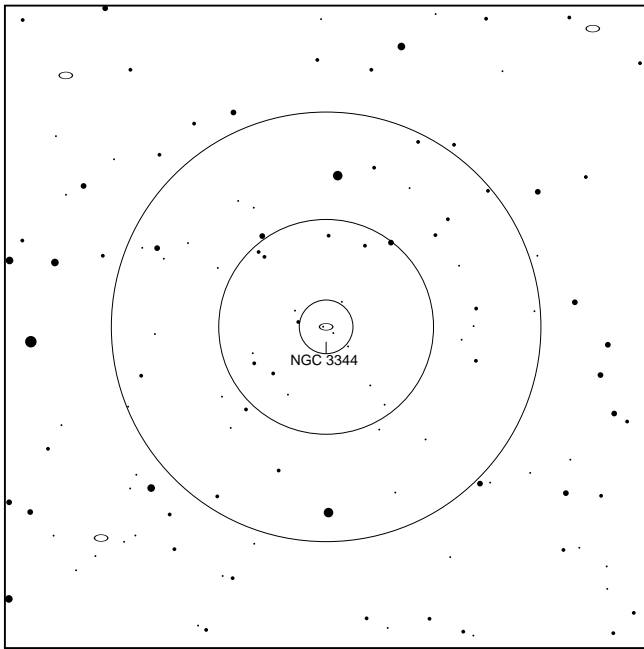
A Herschel 400 Object

Edge-on, near M65-66

U2000 chart: 191, **Tirion chart:** 13, **H-B Astroatlas:** B9, C49, D36. **NGC Description:** pB, vL, vmE 102. **SAC DB Notes:** Leo group, disturbed. **Burnham's:** pp. 1055, 1074, 1078. **Luginbuhl & Skiff:** p. 143. **Deep Space CCD Atlas:** North p. 115.

Personal Notes:





NGC 3344

Type	R.A. (2000)	Dec	Mag.	Size
Sc	10h43.5m	+24°55'	11.1	7.5'x7.0'

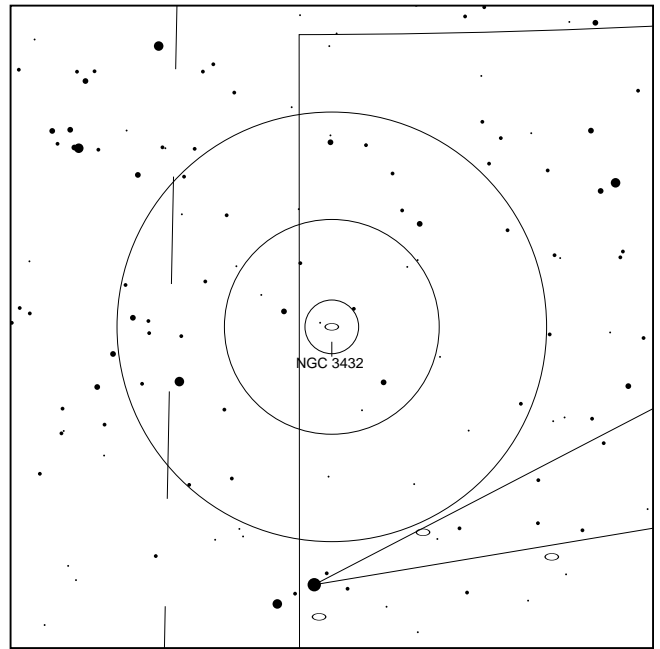
NGC 3344, H I 81, UGC 5840

A Herschel 400 Object

Diffuse face-on

U2000 chart: 145, **Tirion chart:** 6, **H-B Astroatlas:** B9, C31. **NGC Description:** cB, L, gbM, * inv, 2 st f. **Burnham's:** p. 1085. **Luginbuhl & Skiff:** p. 151. **Deep Space CCD Atlas:** North p. 108.

Personal Notes:



NGC 3432

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sc	10h52.5m	+36°37'	11.7	7.5'x2.0'	38°

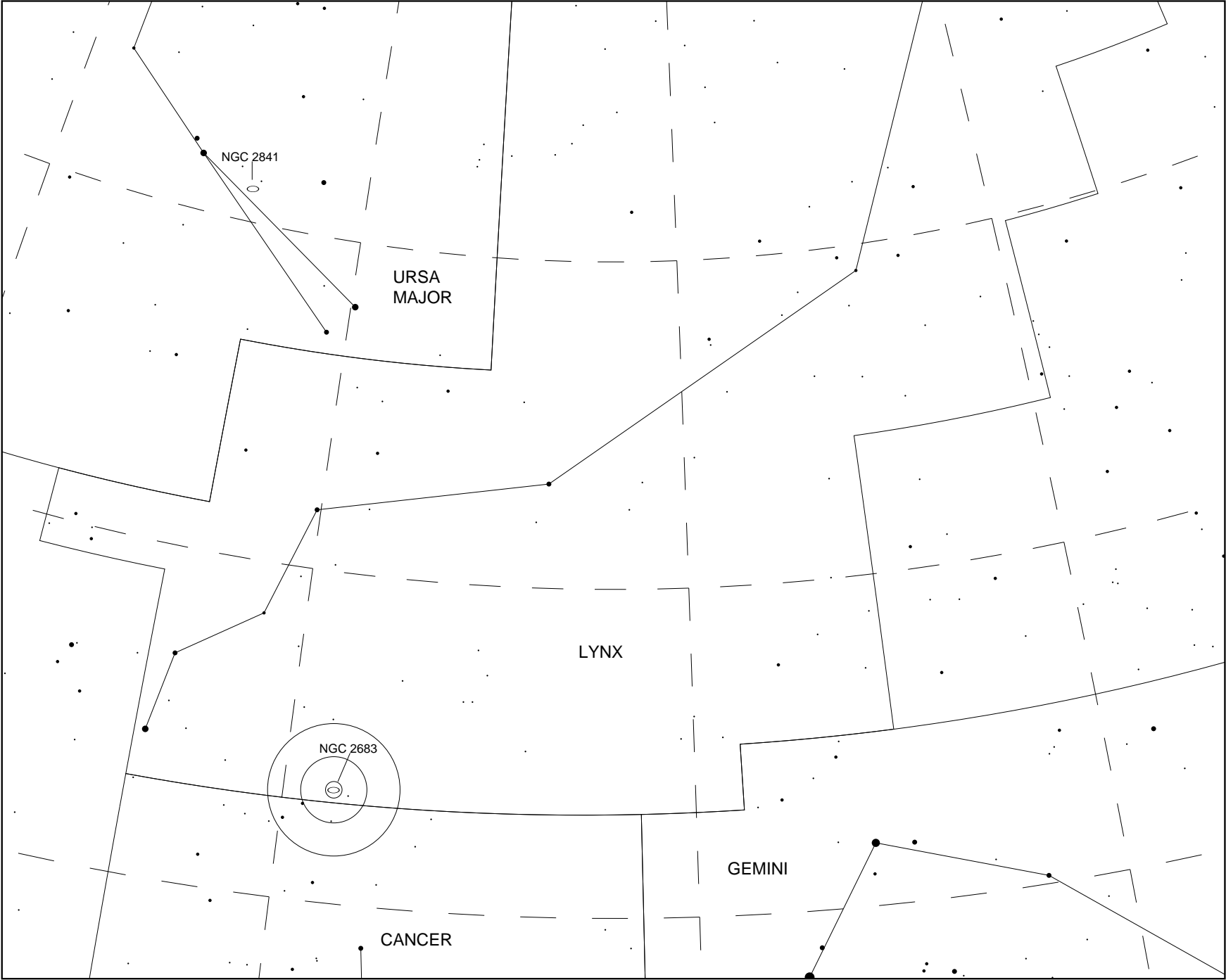
NGC 3432, H I 172, UGC 5986

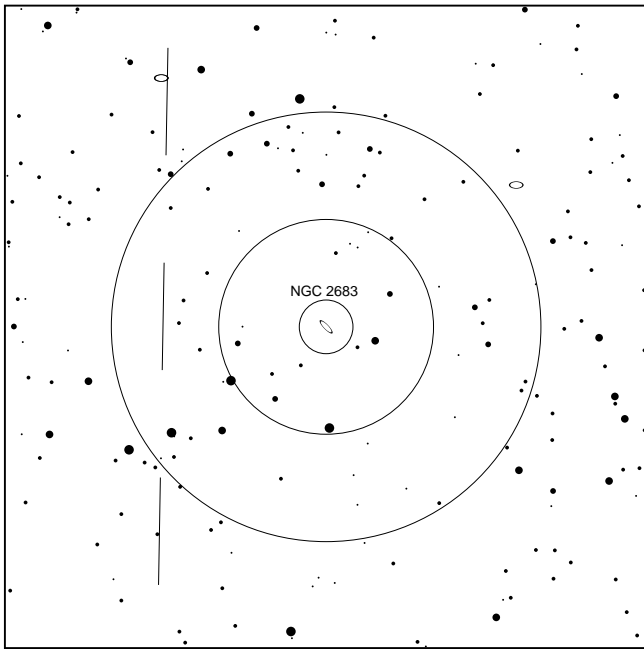
A Herschel 400 Object

Edge-on, faint streak

U2000 chart: 105, **Tirion chart:** 6, **H-B Astroatlas:** B9, C31. **NGC Description:** pB, pL, vmE 40, ** close sp. **SAC DB Notes:** P w UGC 5983, mag 17, 1.2'X1.0'. **Burnham's:** p. 1085. **Luginbuhl & Skiff:** p. 152. **Deep Space CCD Atlas:** North p. 110.

Personal Notes:





NGC 2683

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	08h52.7m	+33°25'	11	9.2'x2.6'	44°

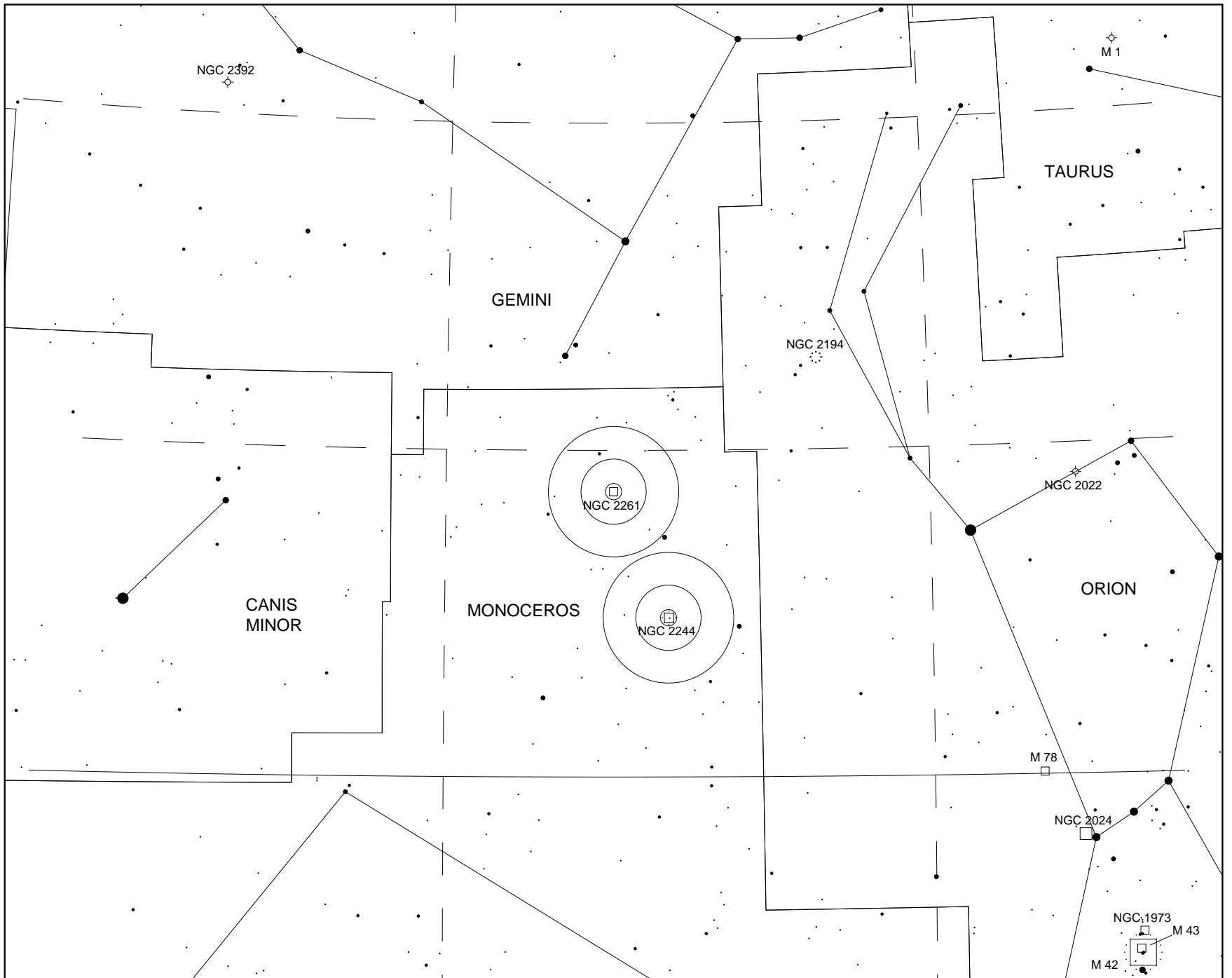
NGC 2683, H I 200, UGC 4641

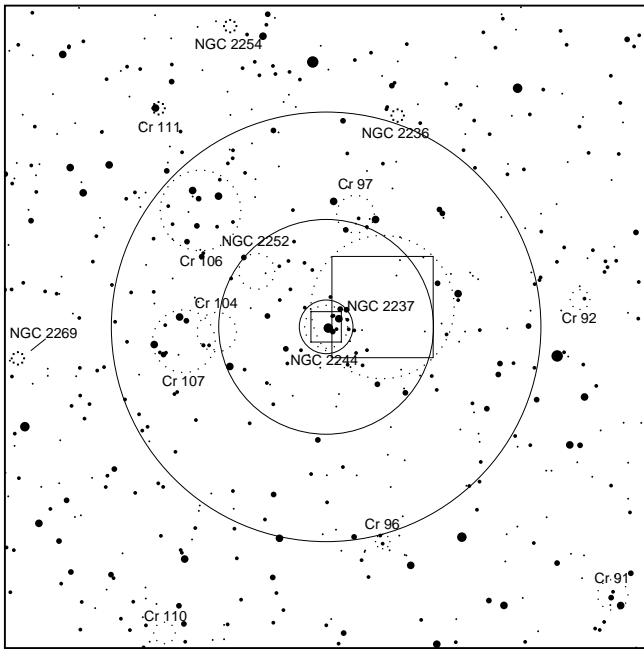
A Herschel 400 Object

Bright edge-on

U2000 chart: 102, **Tirion chart:** 6, **H-B AstroAtlas:** B11, C32. **NGC Description:** vB, vL, vmE39, gmbM. **SAC DB Notes:** peanut-shaped bulge, many filam, arm w dk lanes 1 side. **Burnham's:** p. 1127. **Luginbuhl & Skiff:** p. 159. **Deep Space CCD Atlas:** North p. 94.

Personal Notes:





NGC 2244

Type	R.A. (2000)	Dec	Mag.	Size
OC	06h32.4m	+04°52'	4.8	24.0'

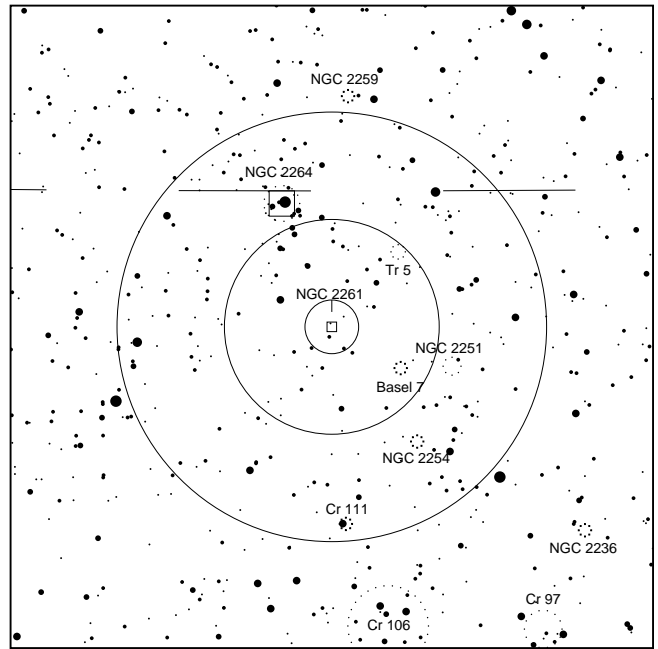
NGC 2244, H VII 2, Rosette Nebula, C 50

A Herschel 400 Object

OC & nebulosity

U2000 chart: 227, **Tirion chart:** 11, **H-B Astroatlas:** B11, C52, D23. **NGC Description:** Cl, beautiful, st sc (12 MON). **Burnham's:** pp. 1187, 1196–1201. **Luginbuhl & Skiff:** p. 167. **Deep Space CCD Atlas:** North p. 64.

Personal Notes:



NGC 2261

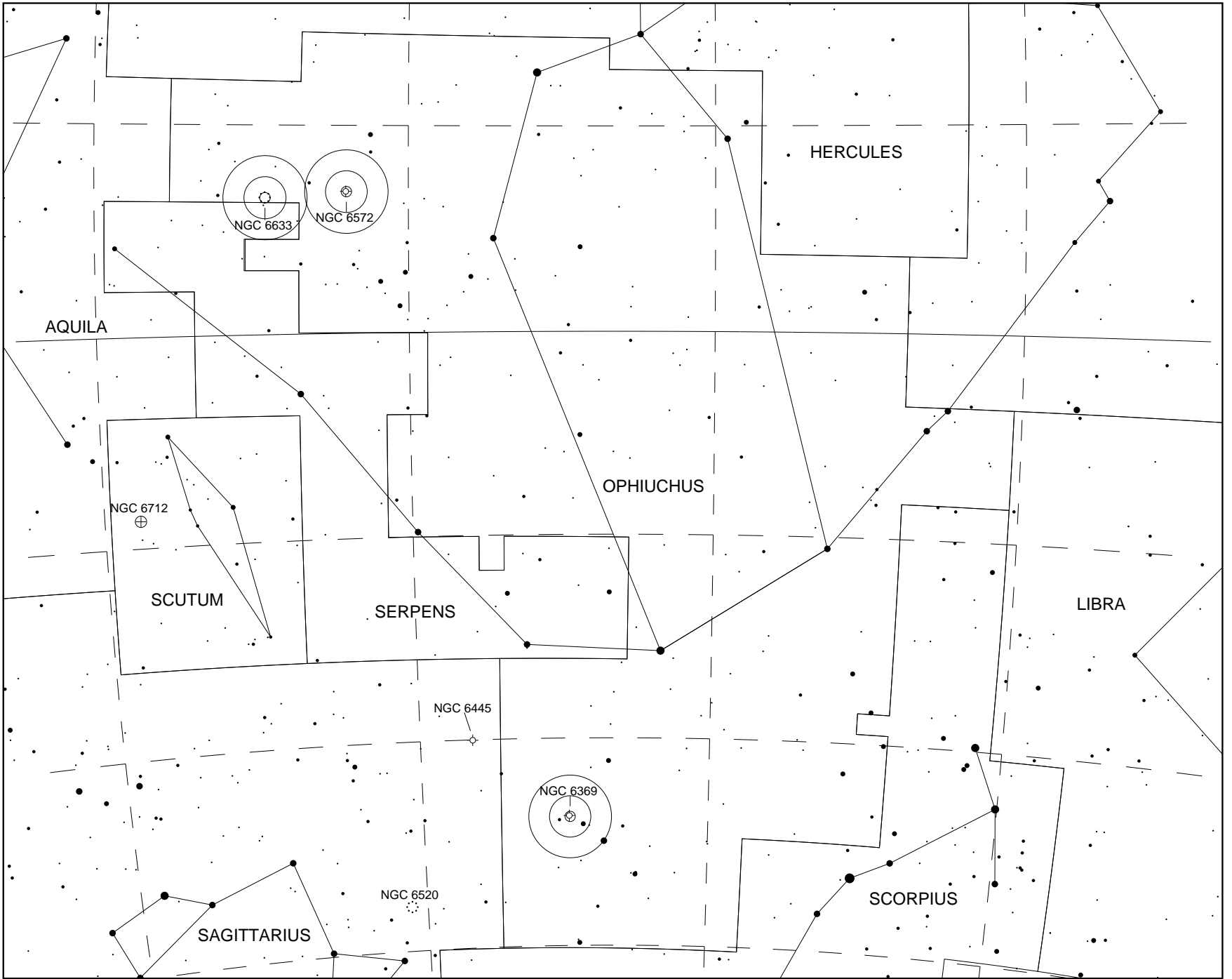
Type	R.A. (2000)	Dec	Mag.	Size
EN	06h39.2m	+08°44'	—	2'x1'

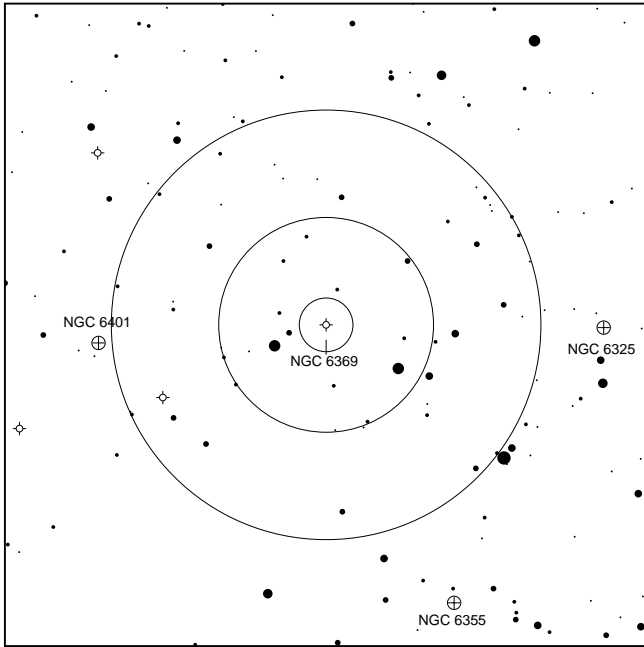
NGC 2261, H IV 2, Hubble's Variable Nebula, C 46

Comet-like

U2000 chart: 182, **Tirion chart:** 11, **H-B Astroatlas:** B11, C52, D23. **NGC Description:** B, vmE 330 deg, N com=*11. **SAC DB Notes:** Fan-shaped, R MON incl. **Burnham's:** pp. 1187, 1202–6. **Luginbuhl & Skiff:** p. 169. **Deep Space CCD Atlas:** North p. 66.

Personal Notes:





NGC 6369

Type	R.A. (2000)	Dec	Mag.	Size
PN	17h29.3m	-23°46'	11	30"x29"

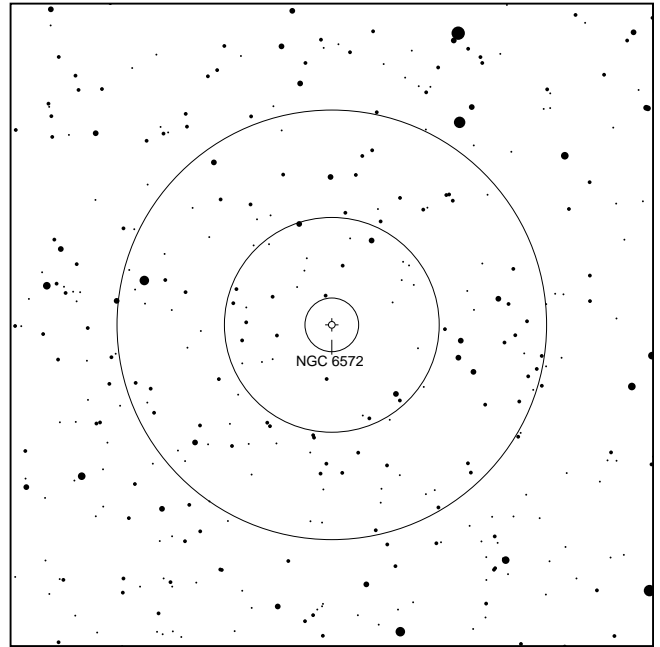
**NGC 6369, PK2+5.1, H IV 11,
Little Ghost Nebula**

A Herschel 400 Object

Near NGC 6309

U2000 chart: 338, **Tirion chart:** 22, **H-B Astroatlas:** B8, C62, D13. **NGC Description:** Annular, pB, S, R. **Burnham's:** p. 1231. **Luginbuhl & Skiff:** p. 174. **Deep Space CCD Atlas:** North p. 179.

Personal Notes:



NGC 6572

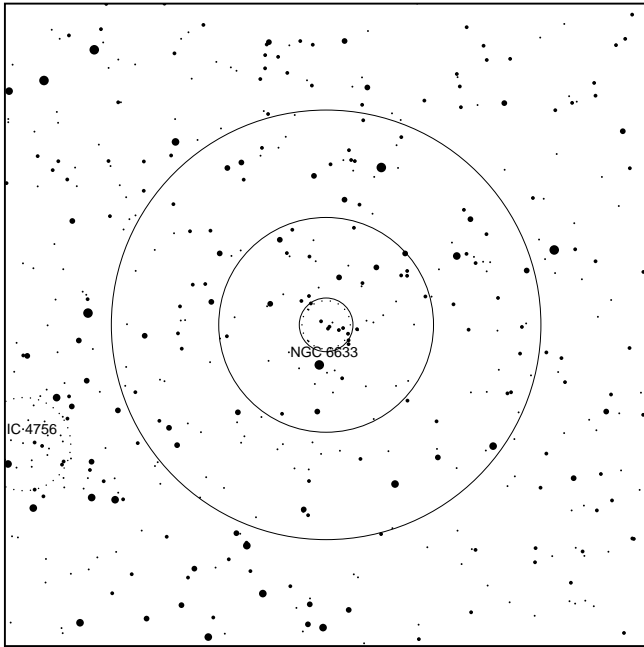
Type	R.A. (2000)	Dec	Mag.	Size
PN	18h12.1m	+06°51'	9	15"x12"

NGC 6572, PK34+11.1

Small, bright

U2000 chart: 204, **Tirion chart:** 15, **H-B Astroatlas:** B7, C43. **NGC Description:** vB, vS, R, l hazy. **Burnham's:** p. 1231. **Luginbuhl & Skiff:** p. 175. **Deep Space CCD Atlas:** North p. 188.

Personal Notes:



NGC 6633

Type	R.A. (2000)	Dec	Mag.	Size
OC	18h27.7m	+06°34'	4.6	27.0'

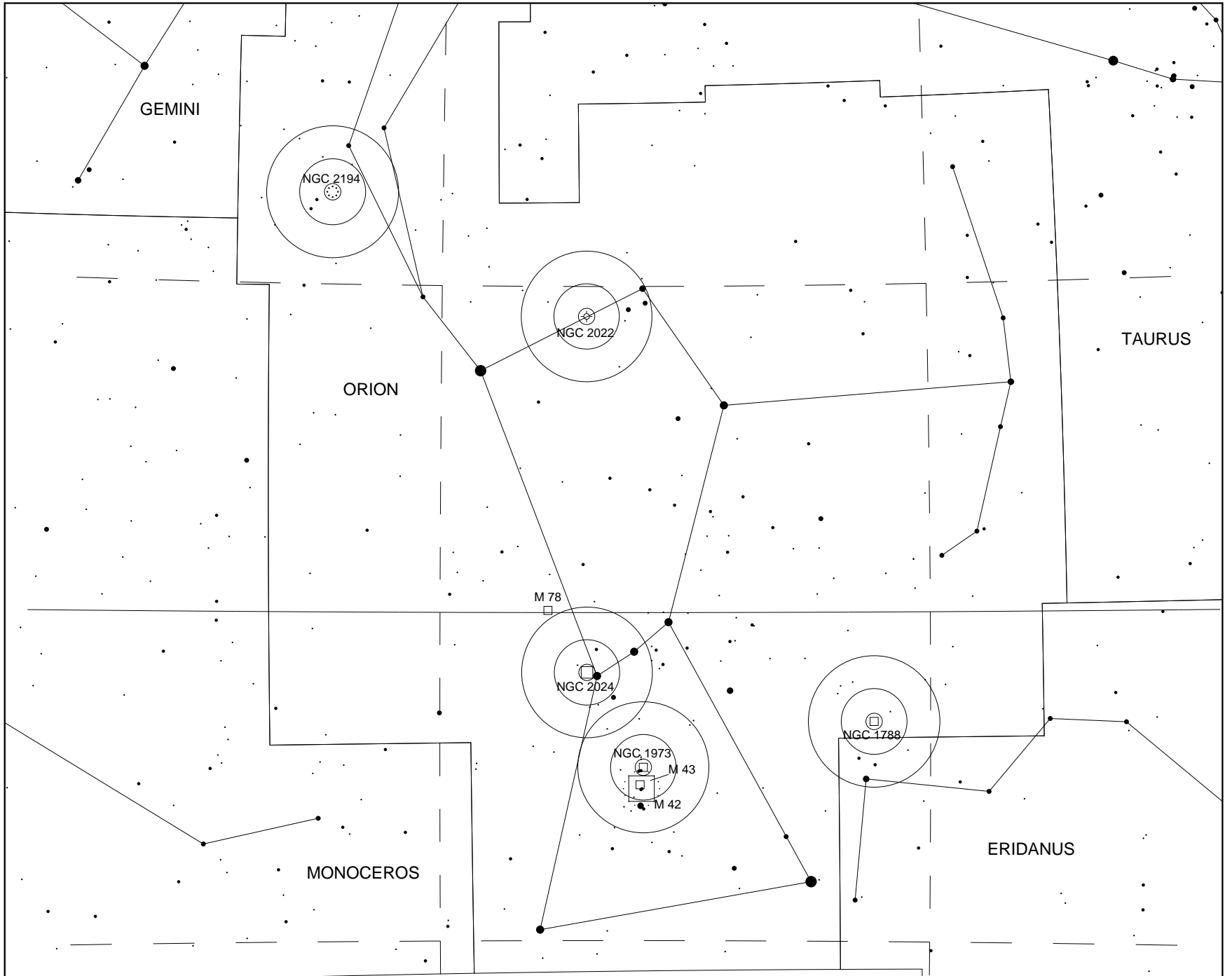
NGC 6633, H VIII 72

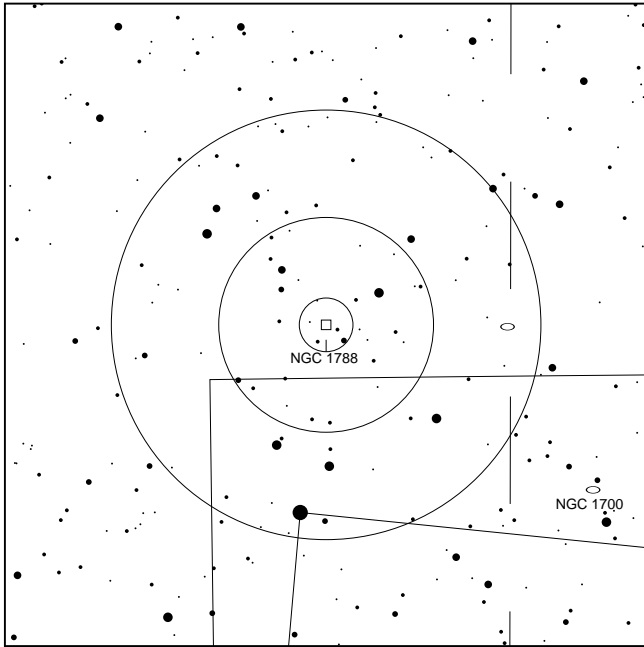
A Herschel 400 Object

Large, sparse, bright

U2000 chart: 205, **Tirion chart:** 15, **H-B Astroatlas:** B5, C43, D10. **NGC Description:** Cl, 1C, st L. **Burnham's:** p. 1231. **Luginbuhl & Skiff:** p. 175. **Deep Space CCD Atlas:** North p. 193.

Personal Notes:





NGC 1788

Type	R.A. (2000)	Dec	Mag.	Size
EN	05h06.9m	-03°20'	—	8'x5'

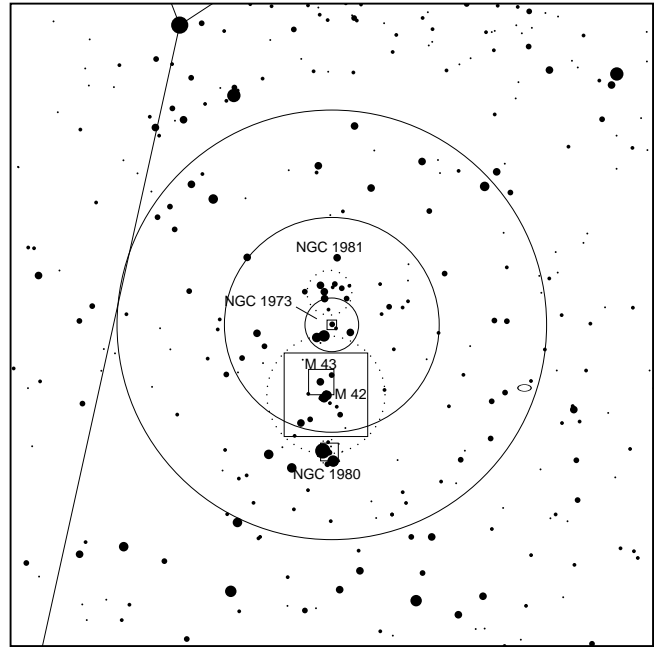
NGC 1788, H V 32

A Herschel 400 Object

Comet shaped

U2000 chart: 225, **Tirion chart:** 11, **H-B Astroatlas:** B14, C53, D38. **NGC Description:** B, cL, R, bM, ***,* 10 inv in the neby. **Burnham's:** p. 1279. **Luginbuhl & Skiff:** pp. 176, 177. **Deep Space CCD Atlas:** North p. 47.

Personal Notes:



NGC 1973

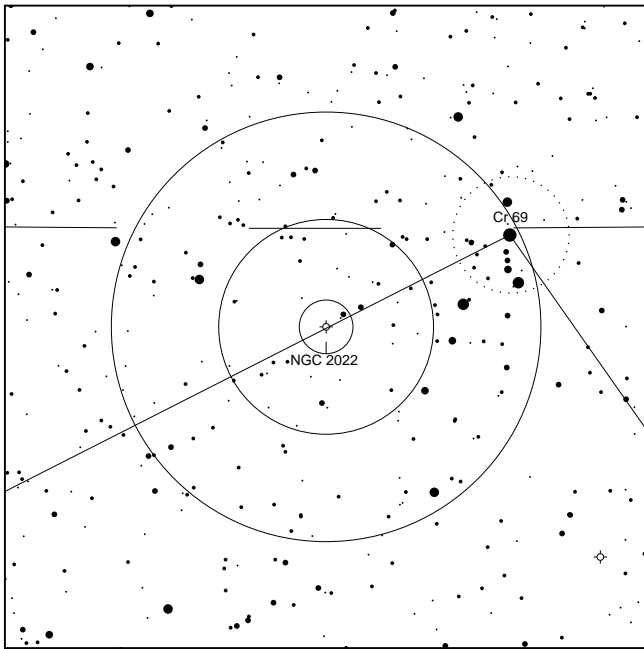
Type	R.A. (2000)	Dec	Mag.	Size
EN	05h35.1m	-04°44'	—	5'x5'

NGC 1973

Near M42, NGC 1973-5-7, NW part

U2000 chart: 225, **Tirion chart:** 11, **H-B Astroatlas:** B14, C53, D24. **NGC Description:** *8, 9 inv in neb. **Burnham's:** pp. 1279, 1303, 1316, 1324, 1325, 1336. **Luginbuhl & Skiff:** p. 177. **Deep Space CCD Atlas:** North p. 52.

Personal Notes:



NGC 2022

Type	R.A. (2000)	Dec	Mag.	Size
PN	05h42.1m	+09°05'	12.8	28"x27"

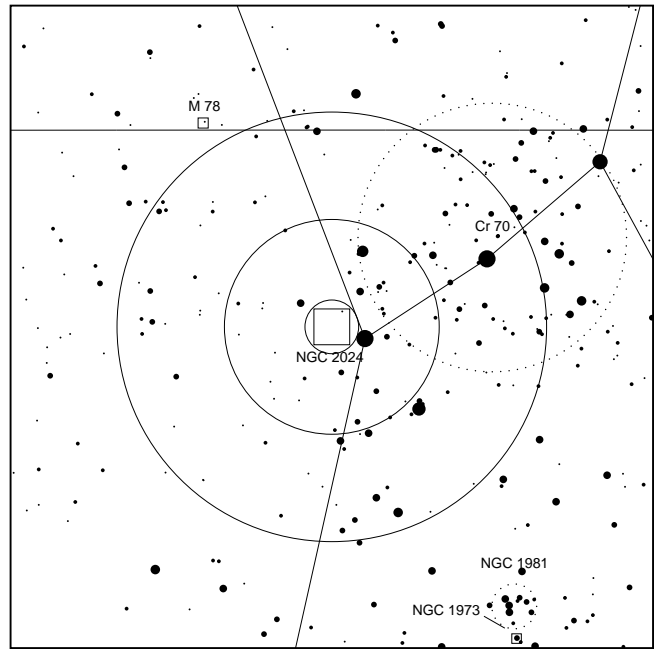
NGC 2022, H IV 34, PK196-10.1

A Herschel 400 Object

Small, annular

U2000 chart: 181, **Tirion chart:** 11, **H-B Astroatlas:** B14, C53. **NGC Description:** pB, vS, vIE. **SAC DB Notes:** small, faint and distinct w annular form. **Burnham's:** p. 1279. **Luginbuhl & Skiff:** p. 178. **Deep Space CCD Atlas:** North p. 56.

Personal Notes:



NGC 2024

Type	R.A. (2000)	Dec	Mag.	Size
EN	05h42.0m	-01°50'	—	30'x30'

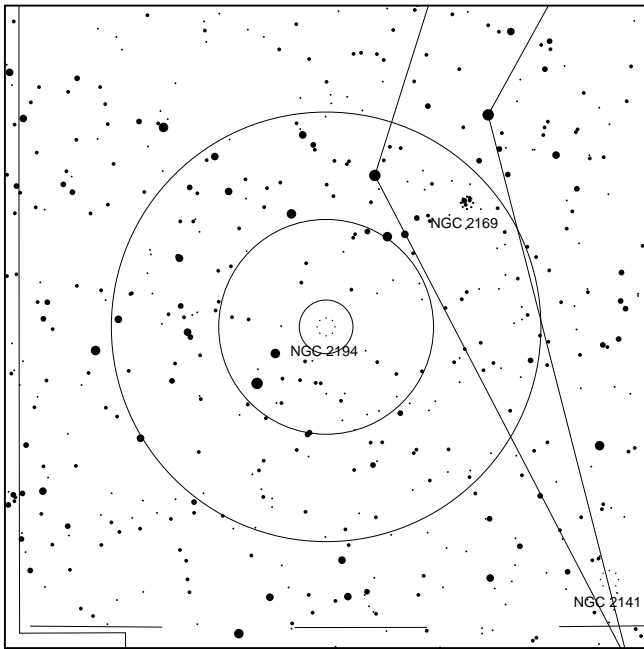
NGC 2024, H V 28, Tank Track Nebula

A Herschel 400 Object

Put Zeta out of field

U2000 chart: 226, **Tirion chart:** 11, **H-B Astroatlas:** B13, C53, D24. **NGC Description:** ! irr, B, vvL, black sp incl. **SAC DB Notes:** Bright but masked by glow of Zeta Ori. **Burnham's:** pp. 1280, 1305-7, 1342-3. **Luginbuhl & Skiff:** pp. 178-9. **Deep Space CCD Atlas:** North p. 56.

Personal Notes:



NGC 2194

Type	R.A. (2000)	Dec	Mag.	Size
OC	06h13.8m	+12°48'	8.5	10.0'

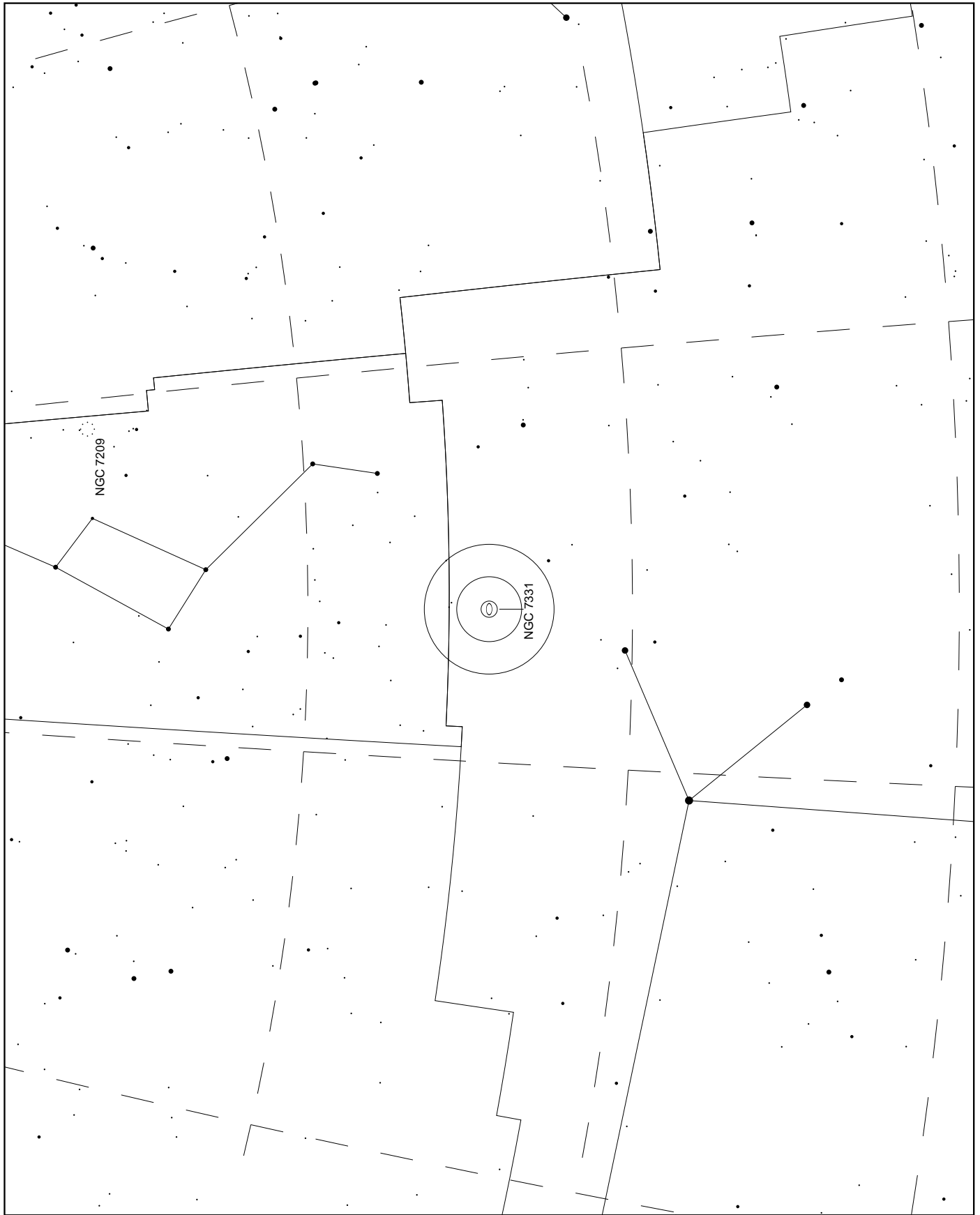
NGC 2194, H VI 5

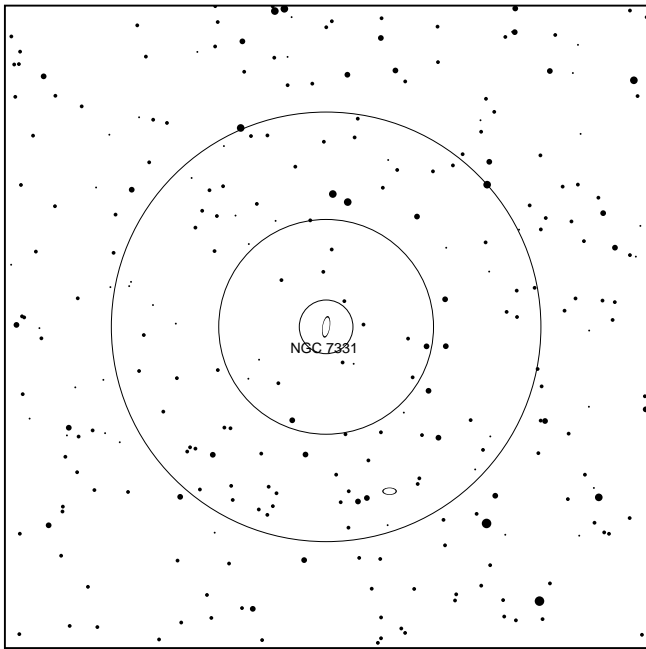
A Herschel 400 Object

Rich with faint stars

U2000 chart: 182, **Tirion chart:** 11, **H-B Astroatlas:** B13, C52, D23. **NGC Description:** Cl, L, Ri, gvmCM. **SAC DB Notes:** faint, rich, look for 2169 nearby. **Burnham's:** pp. 1280, 1345. **Luginbuhl & Skiff:** p. 180. **Deep Space CCD Atlas:** North p. 61.

Personal Notes:





NGC 7331

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	22h37.1m	+34°25'	10.4	11.4'x4.0'	171°

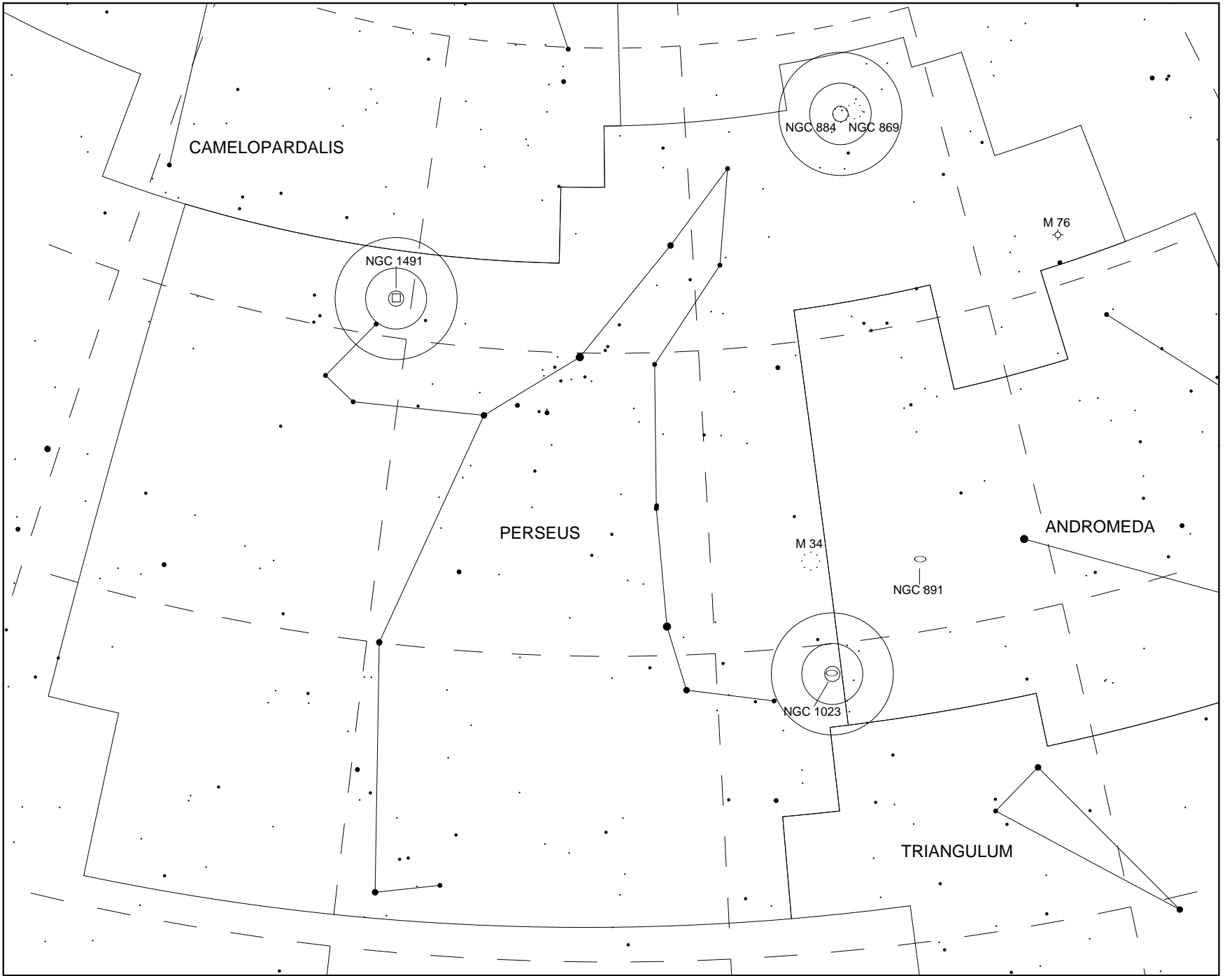
NGC 7331, H I 53, UGC 12113, C 30

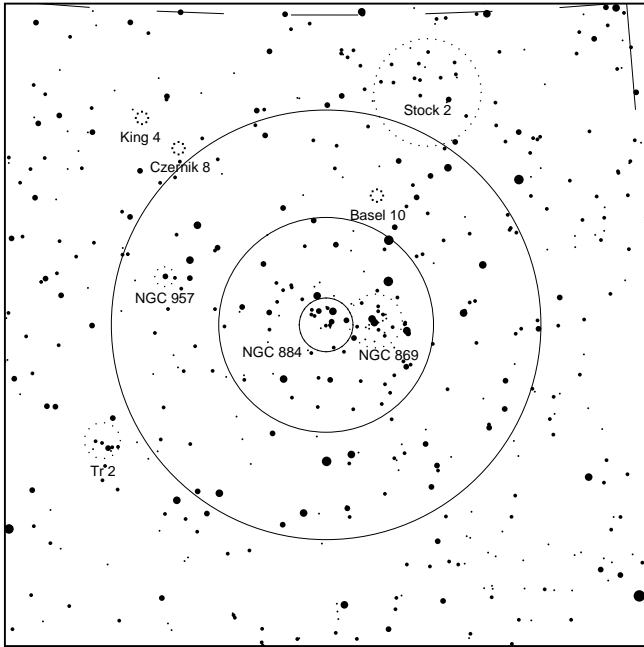
A Herschel 400 Object

Elongated in PA 171 deg

U2000 chart: 123, **Tirion chart:** 9, **H-B Astroatlas:** B3, C22. **NGC Description:** B, pL, pmE163, smbM. **SAC DB Notes:** Brightest in group of F obj, sev dark lanes. **Burnham's:** pp. 1367, 1386-9. **Luginbuhl & Skiff:** pp. 182, 183. **Deep Space CCD Atlas:** North p. 246.

Personal Notes:





NGC 869 & 884

Type	R.A. (2000)	Dec	Mag.	Size
OC	02h22.4m	+57°07'	4.4	30.0'
OC	02h19.0m	+57°09'	4.3	30.0'

Double Cluster

350*, use low power

NGC 869, H VI 33, C 14

A Herschel 400 Object

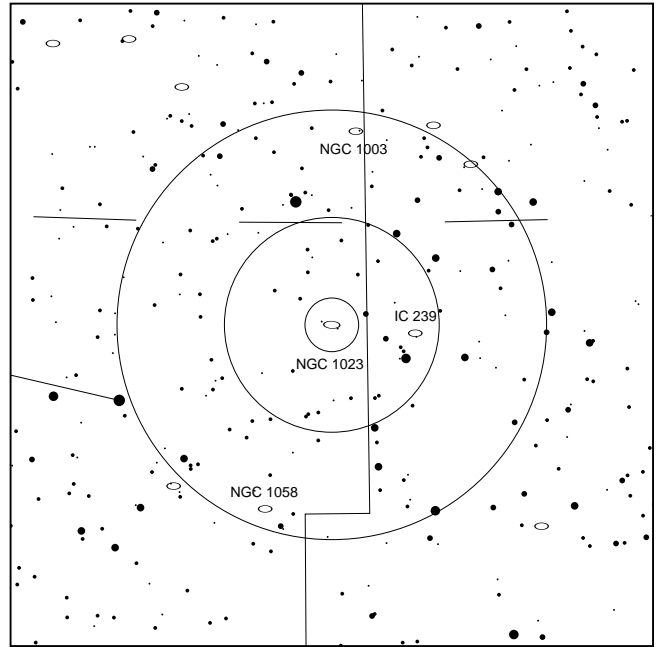
U2000 chart: 37, **Tirion chart:** 1, **H-B AstroAtlas:** B13, C19, D27. **NGC Description:** Cl, vL, vRi, *7...14. **SAC DB Notes:** h Per,in Per OB1, Double Cluster w NGC 884. **Burnham's:** pp. 1402, 1438-47. **Luginbuhl & Skiff:** p. 188. **Deep Space CCD Atlas:** North p. 24.

NGC 884, H VI 34, C 14

A Herschel 400 Object

U2000 chart: 37, **Tirion chart:** 1, **H-B AstroAtlas:** B13, C19, D27. **NGC Description:** Cl, vL, vRi, ruby*M. **SAC DB Notes:** chi Per,in Per OB1, Double Cluster w NGC 869. **Burnham's:** pp. 1402, 1438-47. **Luginbuhl & Skiff:** p. 188 **Deep Space CCD Atlas:** North p. 24.

Personal Notes:



NGC 1023

Type	R.A. (2000)	Dec	Mag.	Size	PA
E7p	02h40.5m	+39°03'	11	9'x4'	87°

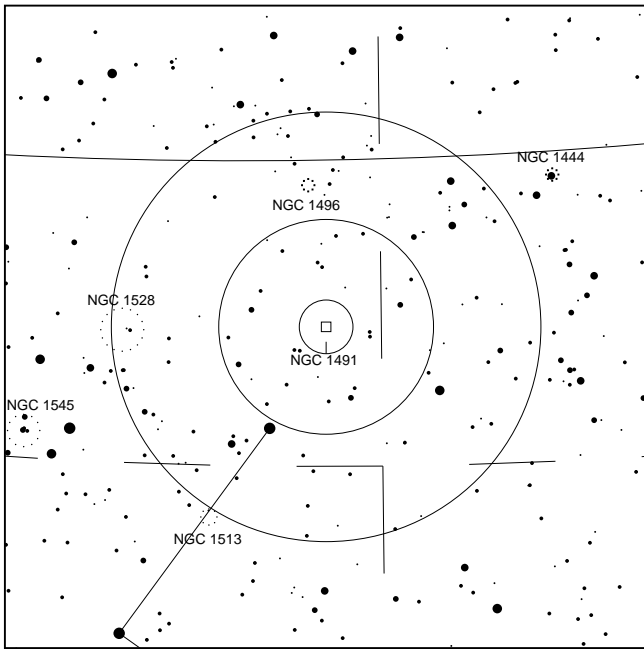
NGC 1023, H I 156, UGC 2154

A Herschel 400 Object

Lens shaped

U2000 chart: 62, **Tirion chart:** 4, **H-B AstroAtlas:** B13, C37, D41. **NGC Description:** vB, vL, vmE, vvmbM. **SAC DB Notes:** brtst in grp, more neb 10' E, lens shp F tuft on E tip. **Burnham's:** p. 1402. **Luginbuhl & Skiff:** pp. 188-9. **Deep Space CCD Atlas:** North p. 29.

Personal Notes:



NGC 1491

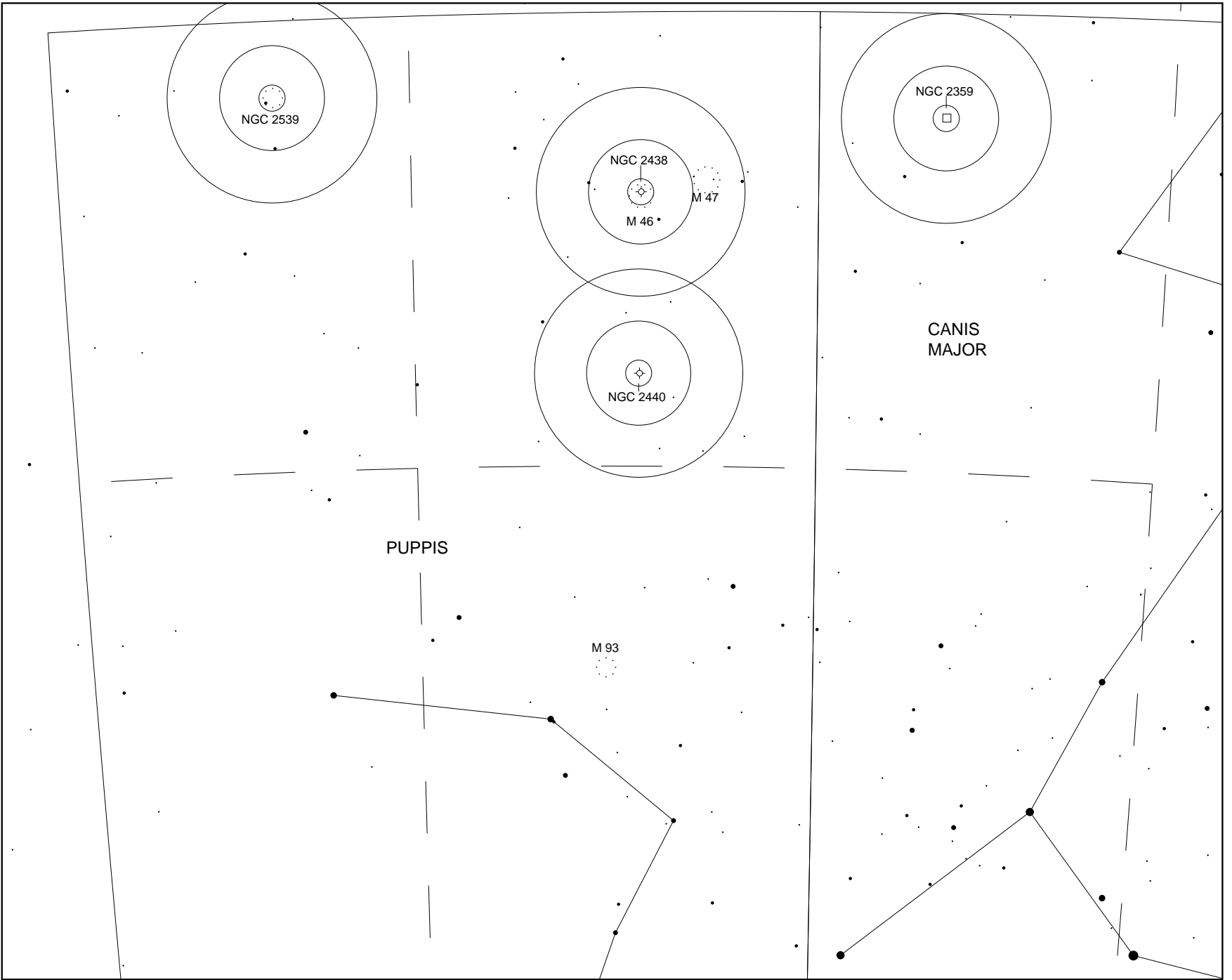
Type	R.A. (2000)	Dec	Mag.	Size
EN	04h03.3m	+51°18'	—	3'x3'

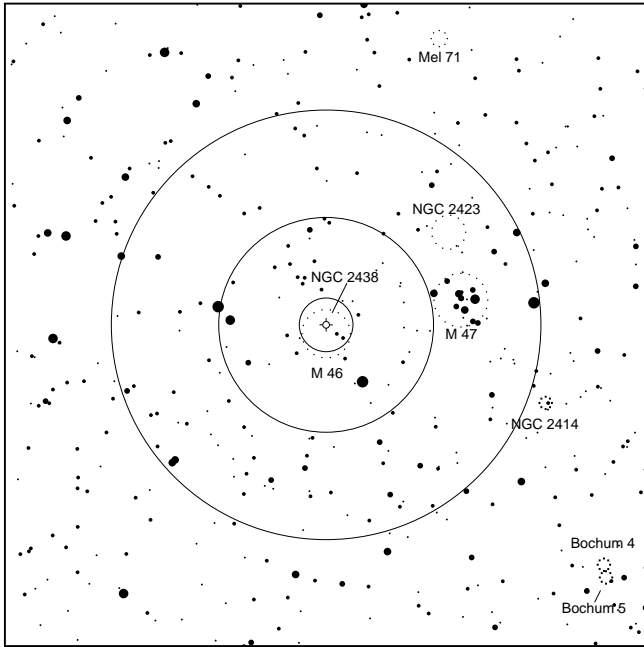
NGC 1491, H I 258

Small, fairly bright

U2000 chart: 39, **Tirion chart:** 1, **H-B Astroatlas:** B13, C18. **NGC Description:** vB, S, iF, bM, r, * inv. **Burnham's:** p. 1403. **Luginbuhl & Skiff:** p. 193. **Deep Space CCD Atlas:** North p. 40.

Personal Notes:





NGC 2438

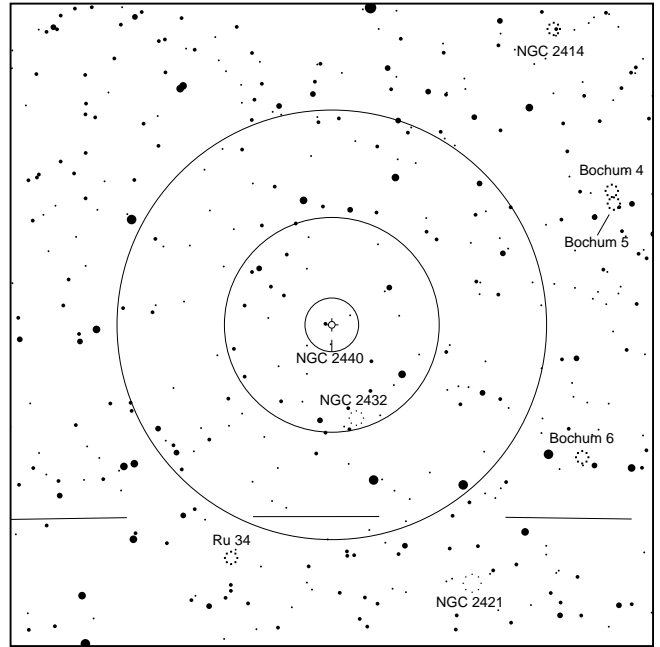
Type	R.A. (2000)	Dec	Mag.	Size
PN	07h41.8m	-14°44'	11	65"

NGC 2438, H IV 39, PK231+4.2

A Herschel 400 Object
On N edge of M46

U2000 chart: 274, **Tirion chart:** 12, **H-B Astroatlas:** B12, C51, D22. **NGC Description:** pB, pS, vIE, r, 3s.75 d. **Burnham's:** pp. 1496, 1510. **Luginbuhl & Skiff:** p. 202. **Deep Space CCD Atlas:** North p. 83-4.

Personal Notes:



NGC 2440

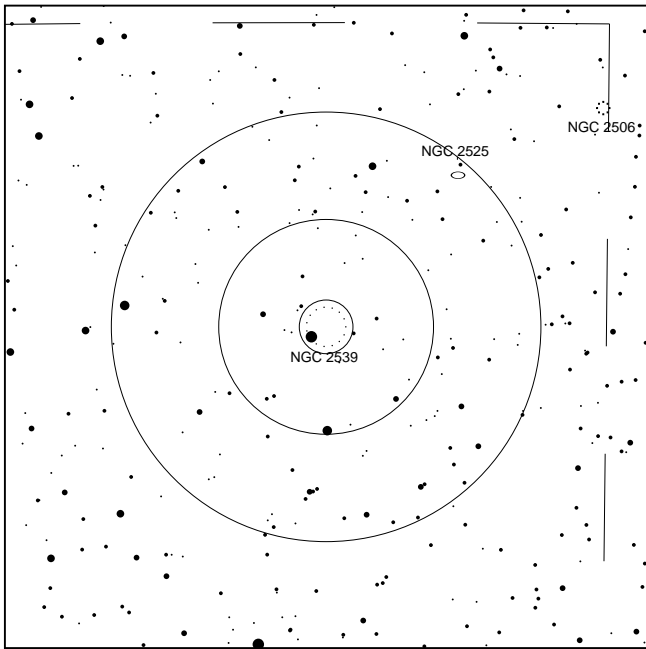
Type	R.A. (2000)	Dec	Mag.	Size
PN	07h41.9m	-18°13'	11.5	54"x20"

NGC 2440, H IV 64, PK234+2.1

A Herschel 400 Object
Almost stellar

U2000 chart: 319, **Tirion chart:** 12, **H-B Astroatlas:** B12, C69, D22. **NGC Description:** cB, not v well def. **SAC DB Notes:** almost starlike, irregular at high power. **Burnham's:** p. 1496. **Luginbuhl & Skiff:** pp. 202-3. **Deep Space CCD Atlas:** North p. 84.

Personal Notes:



NGC 2539

Type	R.A. (2000)	Dec	Mag.	Size
OC	08h10.7m	-12°50'	6.5	22.0'

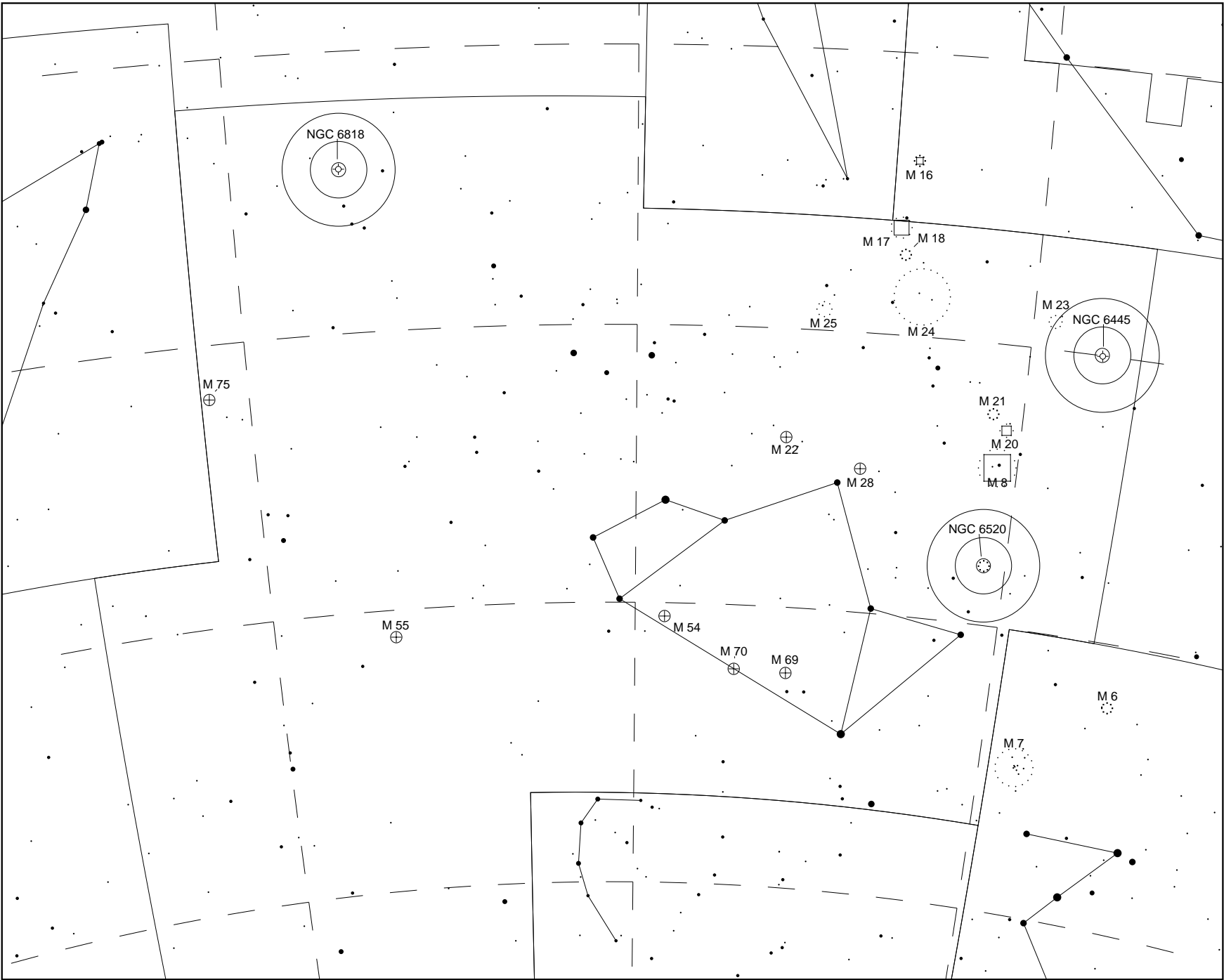
NGC 2539, H VII 11

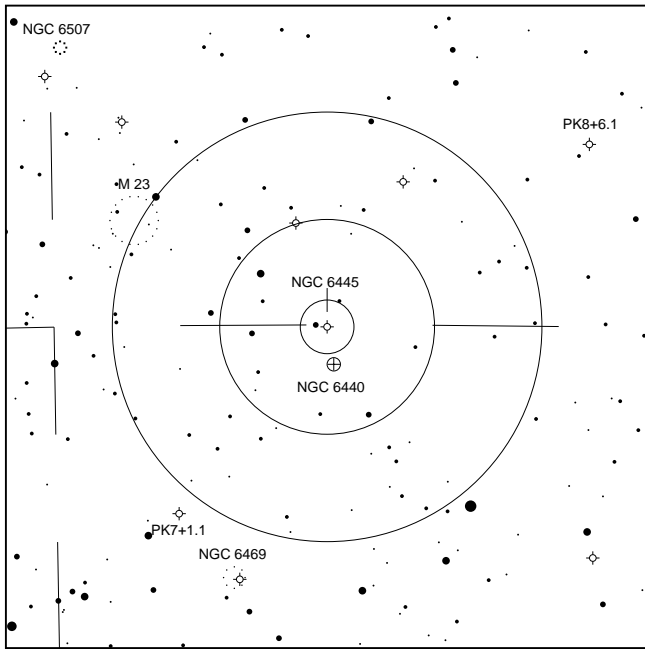
A Herschel 400 Object

Rich, near M46 & M47

U2000 chart: 275, **Tirion chart:** 12, **H-B AstroAtlas:** B12, C51. **NGC Description:** Cl, vL, Ri, IC, *11...13. **SAC DB Notes:** rich cluster, near M46 and M47, D* 19 PUP in field. **Burnham's:** pp. 1497, 1515. **Luginbuhl & Skiff:** p. 205. **Deep Space CCD Atlas:** North p. 89.

Personal Notes:





NGC 6445

Type	R.A. (2000)	Dec	Mag.	Size
PN	17h49.2m	-20°01'	13	35"x30"

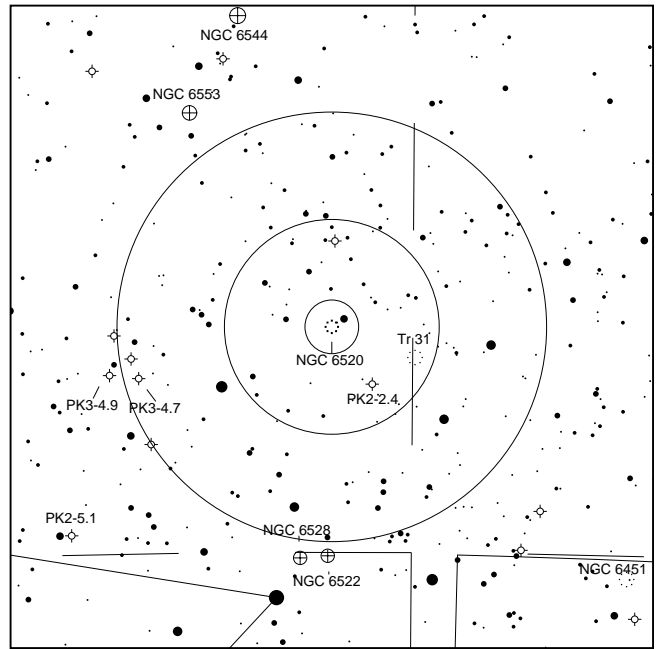
NGC 6445, PK8+3.1, H II 586

A Herschel 400 Object

Annular, near M23

U2000 chart: 338, **Tirion chart:** 22, **H-B Astroatlas:** B6, C62, D11. **NGC Description:** pB, pS, R, gbM, r, *15 np. **Burnham's:** p. 1555. **Luginbuhl & Skiff:** p. 209. **Deep Space CCD Atlas:** North p. 181.

Personal Notes:



NGC 6520

Type	R.A. (2000)	Dec	Mag.	Size
OC	18h03.4m	-27°54'	7.6	6.0'

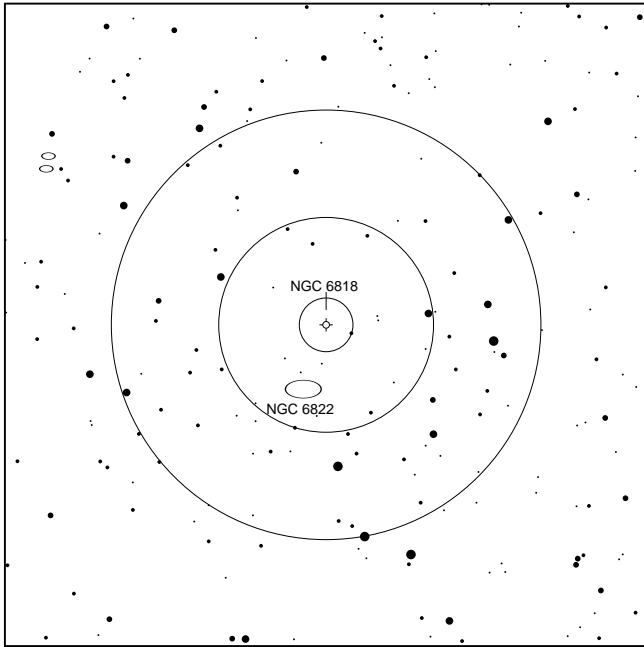
NGC 6520, H VII 7

A Herschel 400 Object

60*, compact, near B86

U2000 chart: 339, **Tirion chart:** 22, **H-B Astroatlas:** B6, C61, D11. **NGC Description:** Cl, pS, RI, IC, st9...13. **SAC DB Notes:** Dark neb B86 on W edge. **Burnham's:** p. 1555. **Luginbuhl & Skiff:** p. 210. **Deep Space CCD Atlas:** North p. 184.

Personal Notes:



NGC 6818

Type	R.A. (2000)	Dec	Mag.	Size
PN	19h44.0m	-14°09'	10	22"x15"

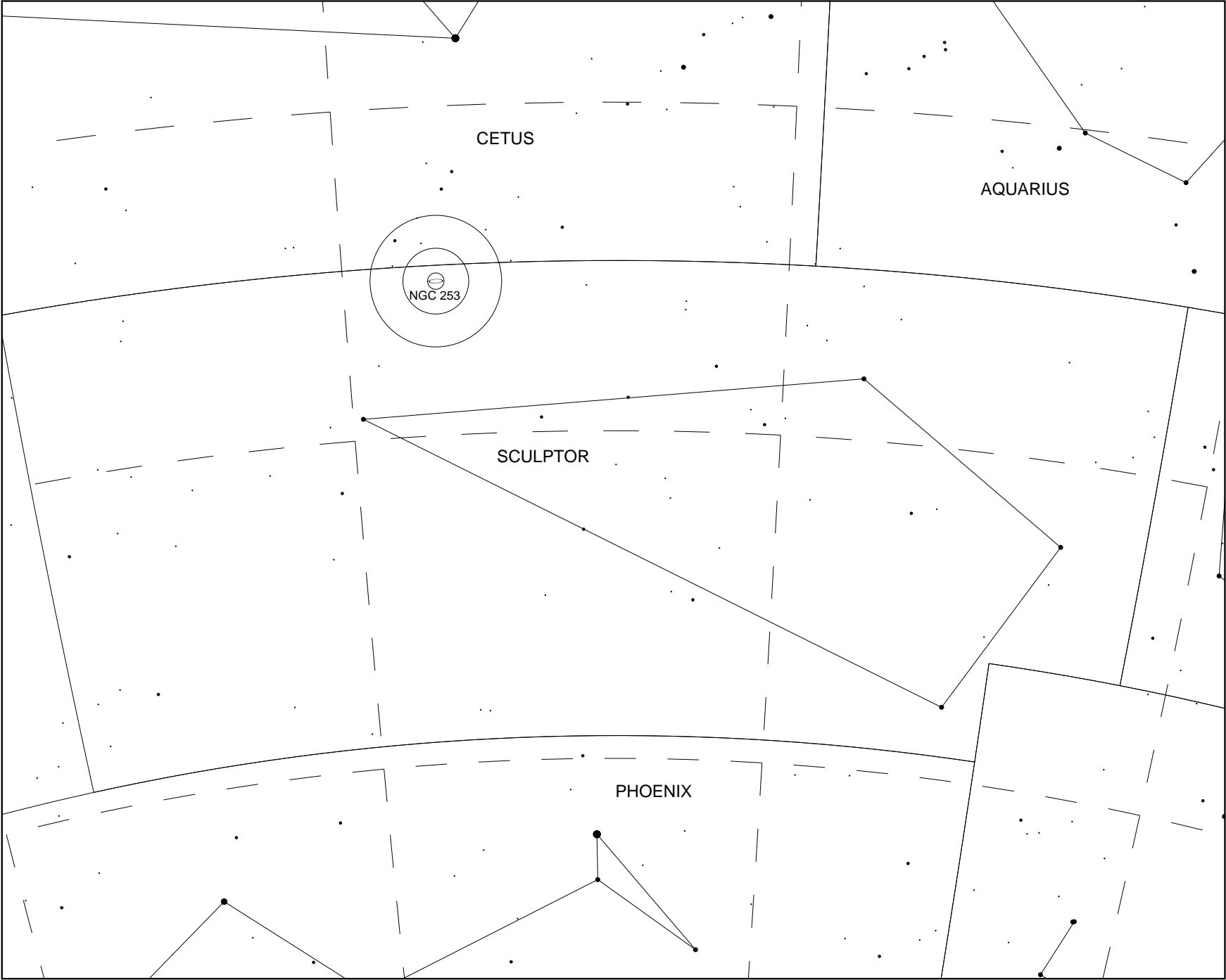
**NGC 6818, H IV 51, Little Gem Nebula,
PK25-17.1**

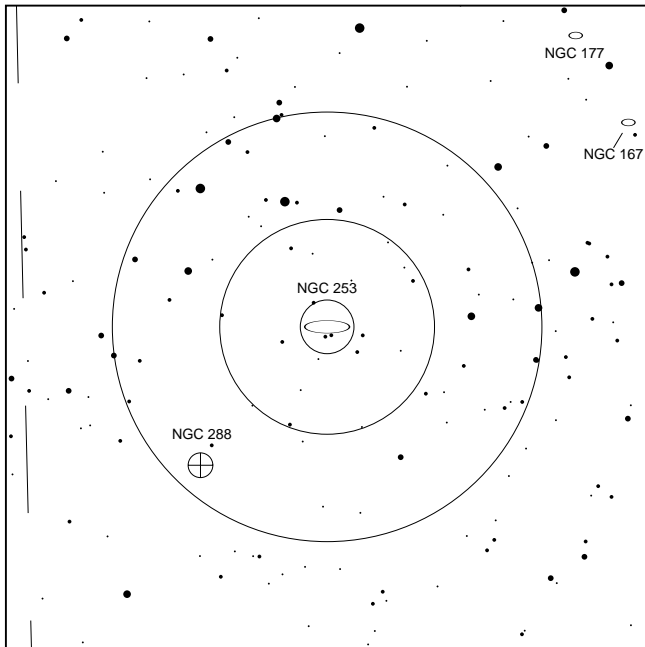
A Herschel 400 Object

Annular, near NGC 6822

U2000 chart: 297, Tirion chart: 16, H-B Astroatlas: B6, C42. NGC Description: B, vS, R. Burnham's: p. 1558. Luginbuhl & Skiff: p. 214. Deep Space CCD Atlas: North p. 208.

Personal Notes:





NGC 253

Type	R.A. (2000)	Dec	Mag.	Size	PA
Scp	00h47.5m	-25°18'	7.1	25'x7'	52°

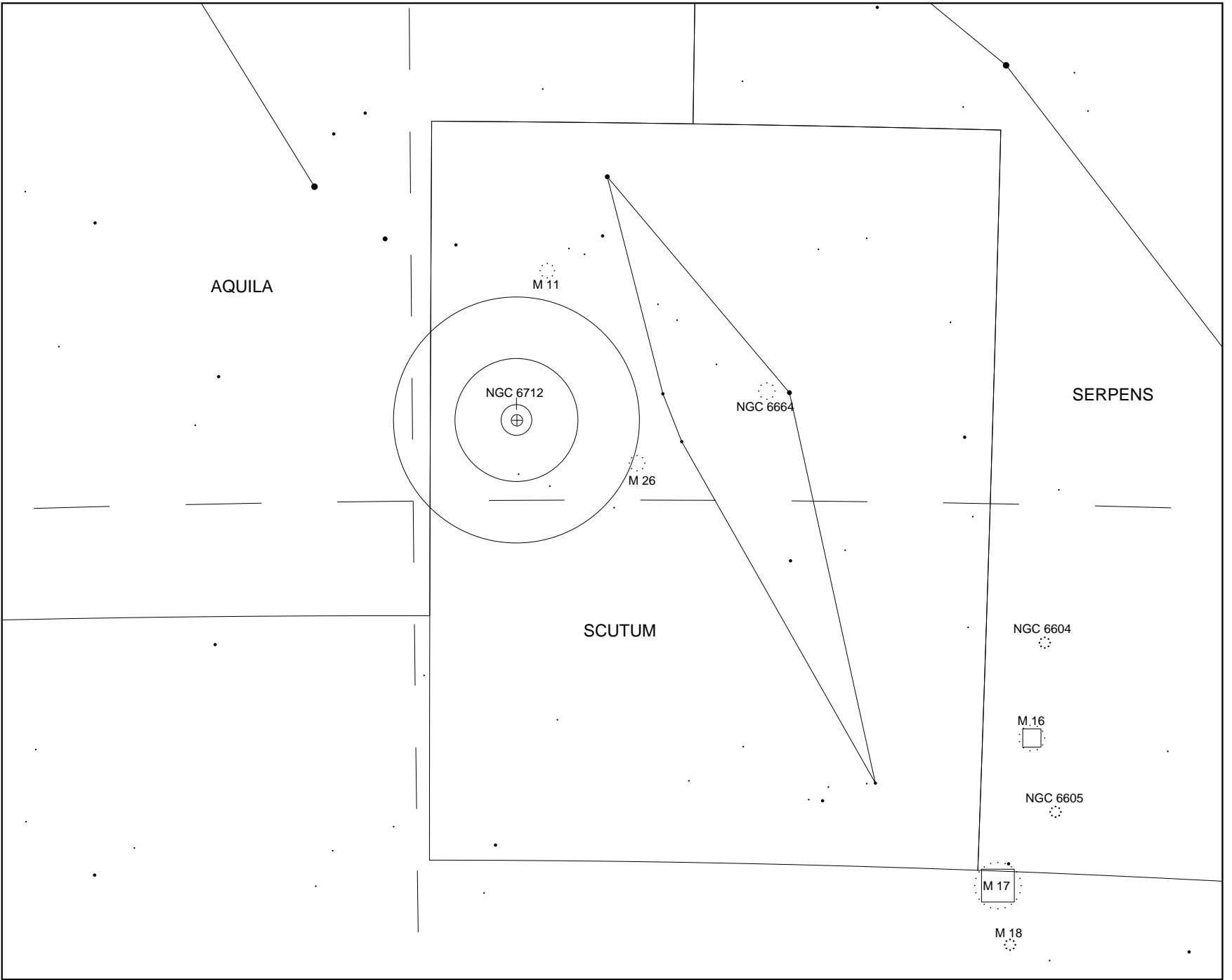
NGC 253, H V 1, C 65, MCG-4-03-009

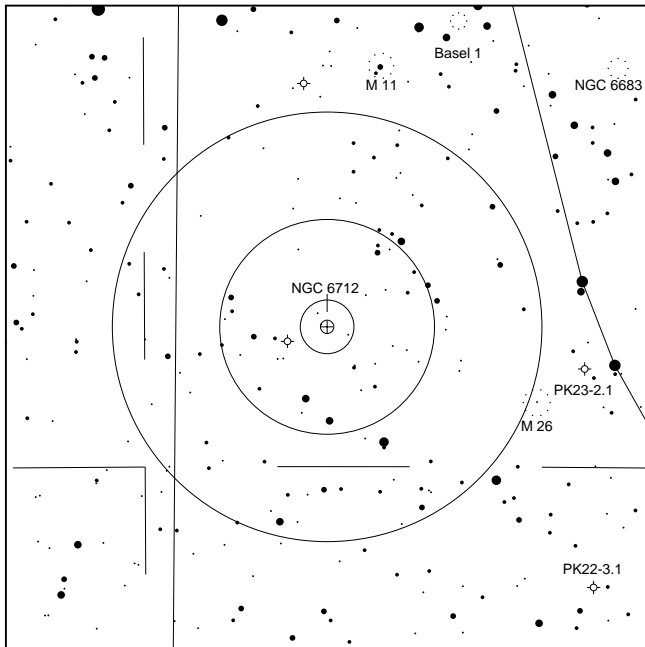
A Herschel 400 Object

Large

U2000 chart: 306, **Tirion chart:** 18, **H-B AstroAtlas:** B4, C74. **NGC Description:** !!vvB, vvL, vmE 54 degrees, gbM. **SAC DB Notes:** Sandage — arms are more defined by dust than *. **Burnham's:** pp. 1732, 1736-9. **Luginbuhl & Skiff:** p. 221. **Deep Space CCD Atlas:** North p. 9. South p. 7.

Personal Notes:





NGC 6712

Type	R.A. (2000)	Dec	Mag.	Size
GC	18h53.1m	-08°42'	8.2	7.2

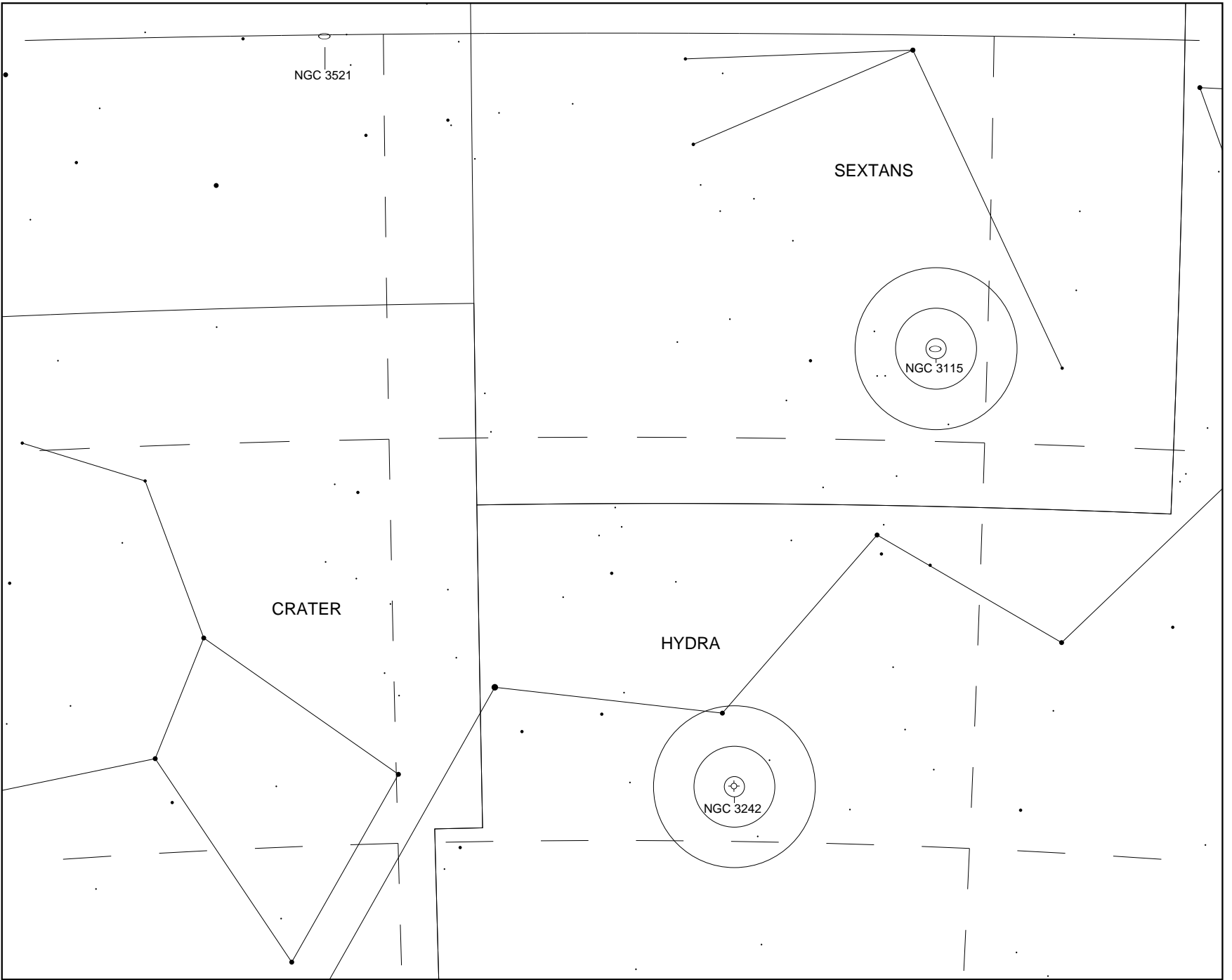
NGC 6712, H I 47

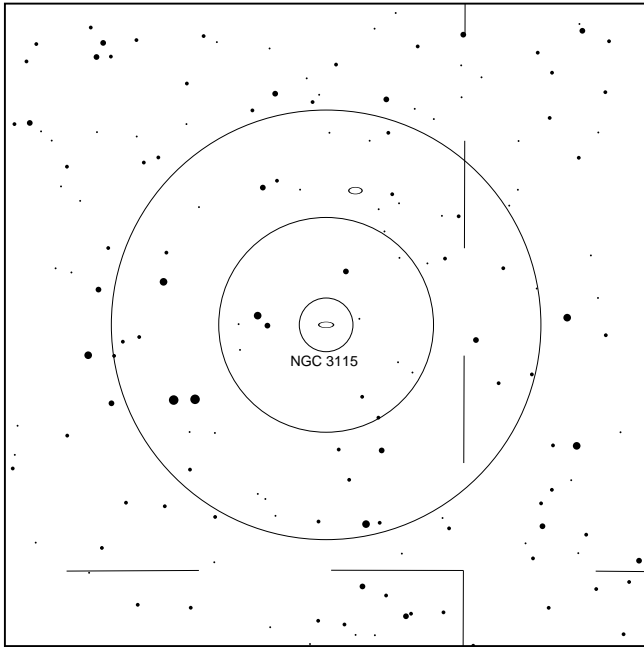
A Herschel 400 Object

PN IC 1295 in field

U2000 chart: 295, **Tirion chart:** 15, **H-B Astroatlas:** B6, C43, D10. **NGC Description:** pB, vL, irr, rrr.
Burnham's: p. 1743. **Luginbuhl & Skiff:** pp. 226-7.
Deep Space CCD Atlas: North p. 200.

Personal Notes:





NGC 3115

Type	R.A. (2000)	Dec	Mag.	Size	PA
E6	10h05.2m	-07°43'	10.1	8.3'x3.2'	40°

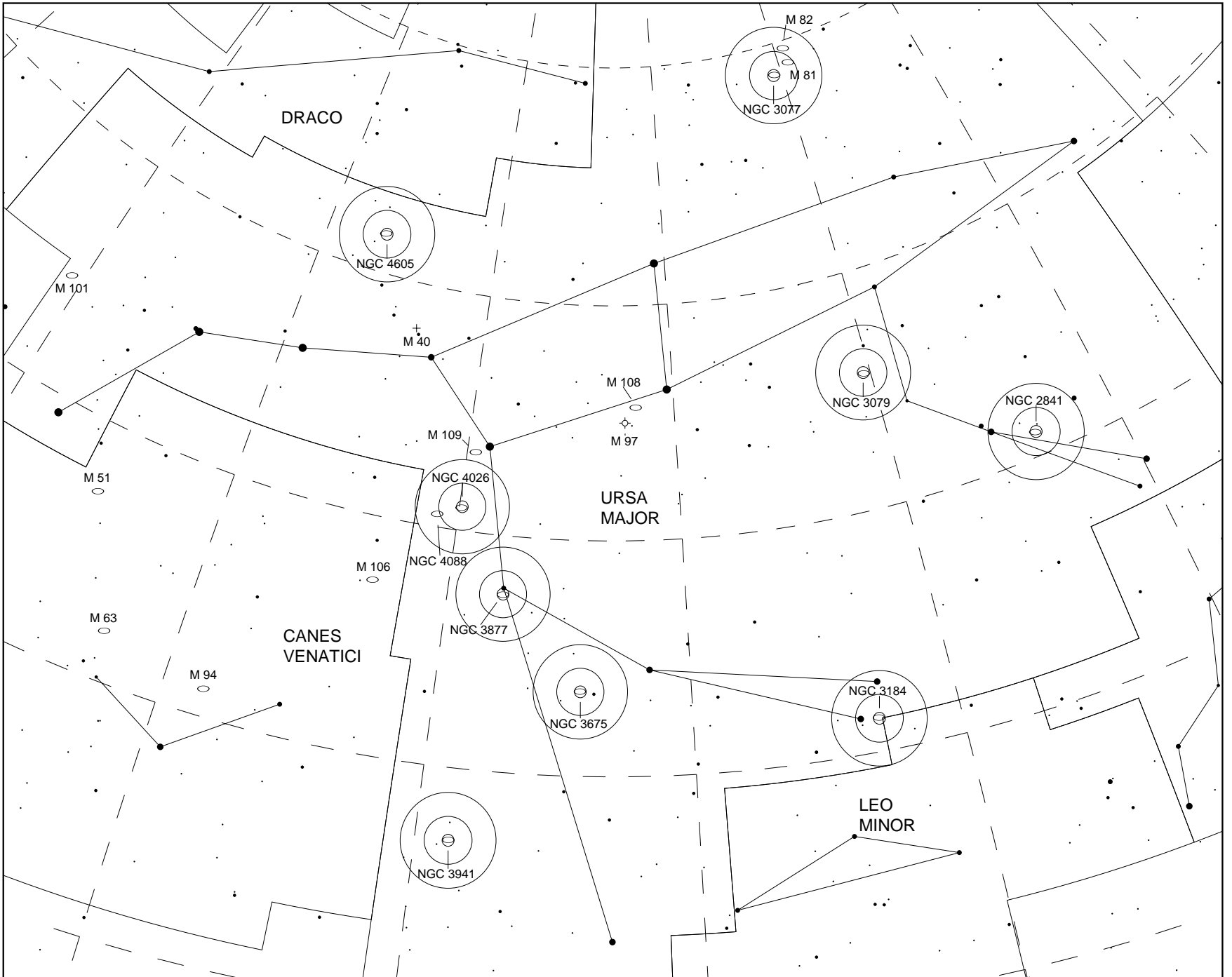
**NGC 3115, H I 163, Spindle Galaxy, C 53
MCG-1-26-018**

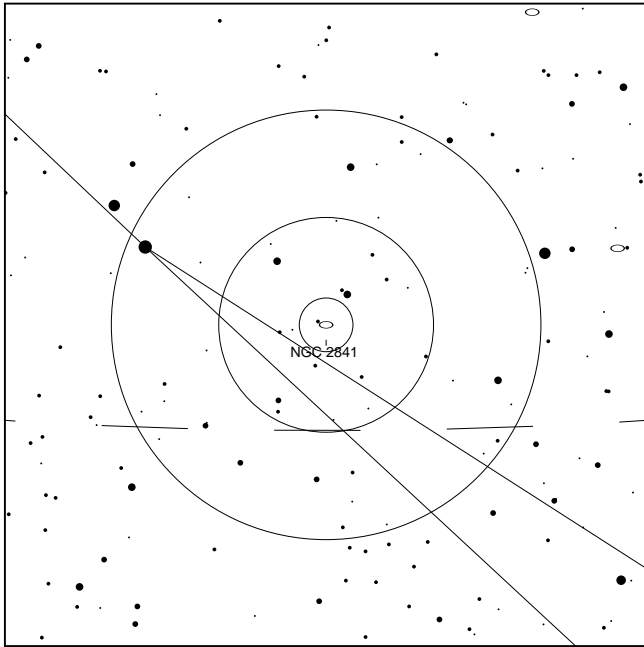
A Herschel 400 Object

Lens-shaped

U2000 chart: 279, **Tirion chart:** 13, **H-B Astroatlas:** B10, C49. **NGC Description:** vB, L, vmE 46, vgsmb-MEN. **Burnham's:** pp. 1795, 1796-7.. **Luginbuhl & Skiff:** pp. 231-2. **Deep Space CCD Atlas:** North p. 104. **South** p. 67.

Personal Notes:





NGC 2841

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	09h22.0m	+50°59'	10.5	7.4'x3.5'	147°

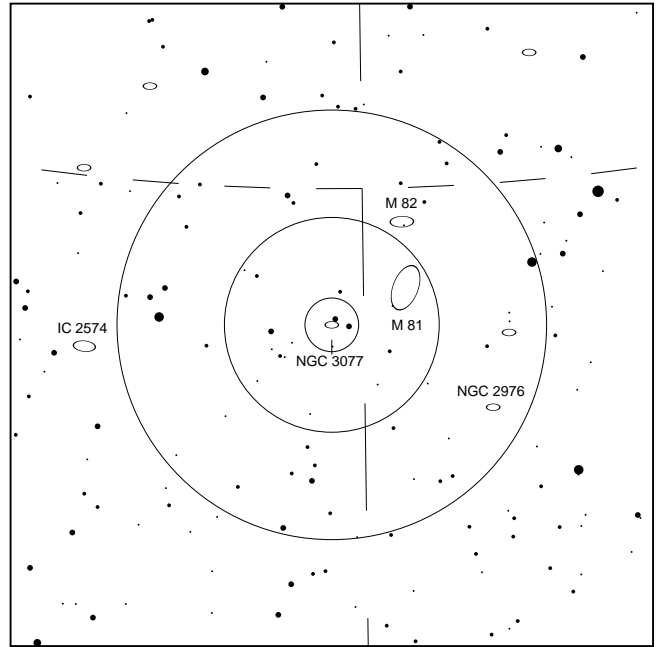
NGC 2841, H I 205, UGC 4966

A Herschel 400 Object

Bright edge-on

U2000 chart: 44, **Tirion chart:** 2, **H-B AstroAtlas:** B2, C14. **NGC Description:** vB, L, vmE151, vsmbM = *10. **SAC DB Notes:** fine spiral w symmetrical whorls. **Burnham's:** p. 1929. **Luginbuhl & Skiff:** p. 242. **Deep Space CCD Atlas:** North p. 98.

Personal Notes:



NGC 3077

Type	R.A. (2000)	Dec	Mag.	Size	PA
E2p	10h03.3m	+68°44'	10.7	6.0'x4.5'	45°

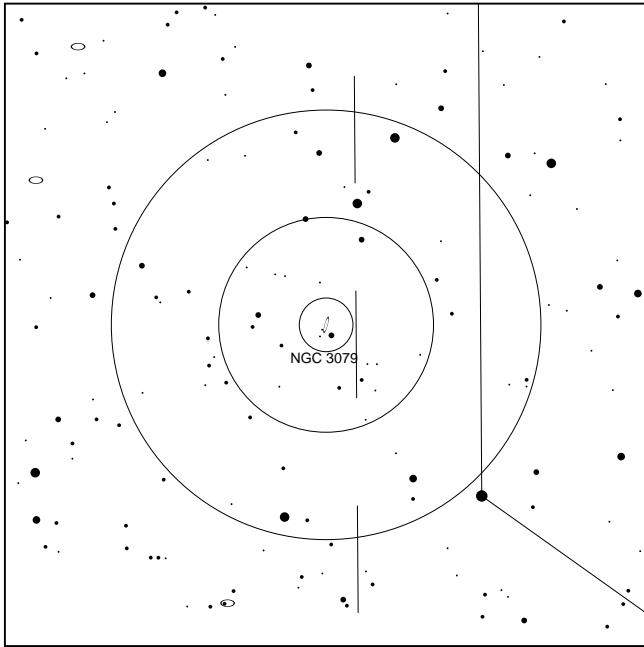
NGC 3077, H I 286, UGC 5398

A Herschel 400 Object

Bright core

U2000 chart: 23, **Tirion chart:** 2, **H-B AstroAtlas:** B2, C14. **NGC Description:** cB, cL, mbM, R w ray. **SAC DB Notes:** M81 group, dust streamers tending to radial direction. **Burnham's:** pp. 1930, 1987, 1993-6. **Luginbuhl & Skiff:** p. 244. **Deep Space CCD Atlas:** North p. 103.

Personal Notes:



NGC 3079

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	10h02.0m	+55°41'	11.2	8.7'x1.6'	165°

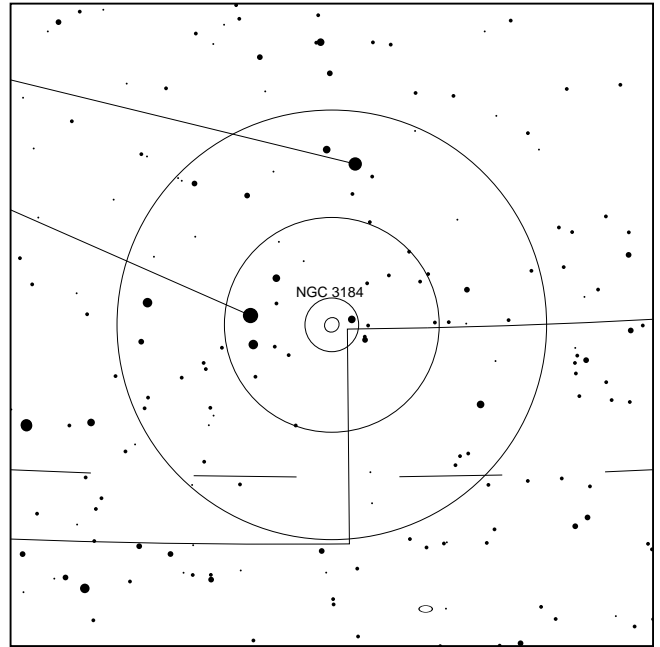
NGC 3079, H V 47, UGC 5387

A Herschel 400 Object

Elongated in PA 165 deg

U2000 chart: 45, **Tirion chart:** 2, **H-B Astroatlas:** B2, C13. **NGC Description:** vB, L, mE 135, long streak. **SAC DB Notes:** brightest of 3, comp 6.5 nf, 0.9'X0.4', mag 14.6. **Burnham's:** p. 1930. **Luginbuhl & Skiff:** p. 244. **Deep Space CCD Atlas: North** p. 103.

Personal Notes:



NGC 3184

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sc	10h18.3m	+41°25'	10.4	8.5'x7.8'	135°

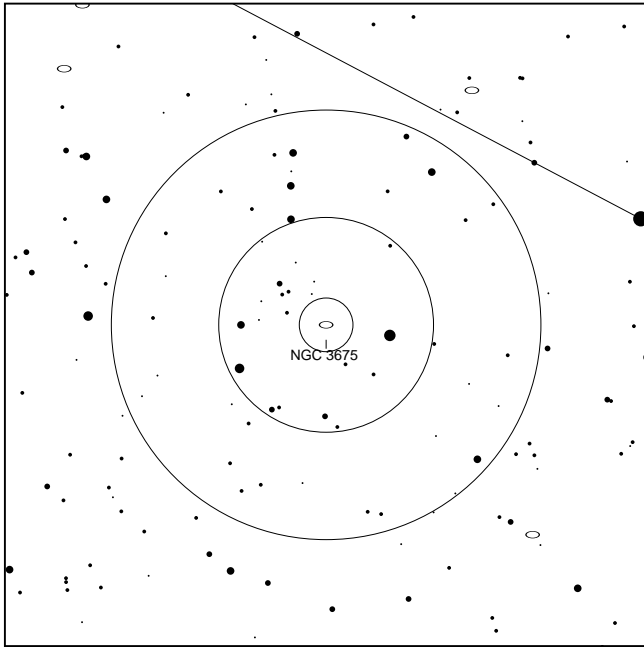
NGC 3184, H I 168, UGC 5557

A Herschel 400 Object

Diffuse face-on

U2000 chart: 72, **Tirion chart:** 6, **H-B Astroatlas:** B9, C31. **NGC Description:** pB, vL, R, vgbM. **SAC DB Notes:** svBN, smooth lens w spiral pattern of dark markings. **Burnham's:** pp. 1930, 1961. **Luginbuhl & Skiff:** p. 244. **Deep Space CCD Atlas: North** p. 106.

Personal Notes:



NGC 3675

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	11h26.1m	+43°35'	10.4	6.8'x3.5'	178°

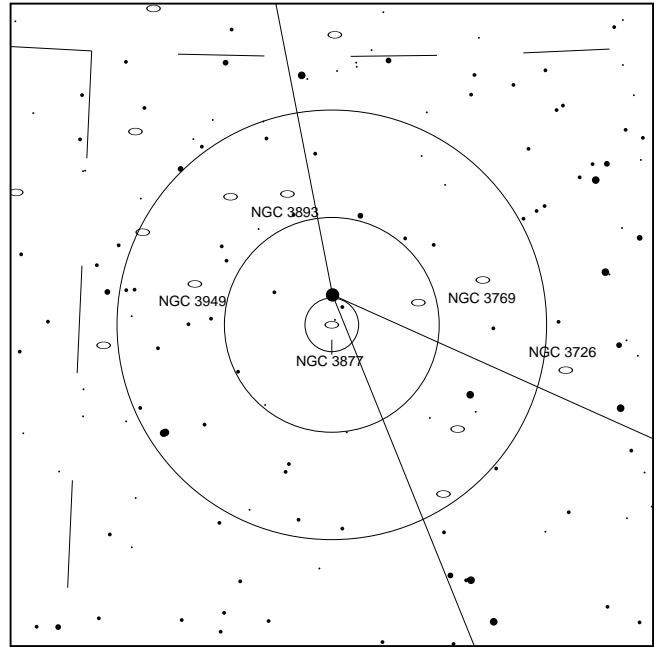
NGC 3675, H I 194, UGC 6439

A Herschel 400 Object

In field of 56 UMA

U2000 chart: 73, **Tirion chart:** 6, **H-B Astroatlas:** B9, C30, D35. **NGC Description:** vB, cL, vmE 0, vsmbMN, many st p. **SAC DB Notes:** in field of 56 UMA. **Burnham's:** p. 1932. **Luginbuhl & Skiff:** p. 247. **Deep Space CCD Atlas:** North p. 116.

Personal Notes:



NGC 3877

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sc	11h46.1m	+47°30'	11.8	5.6'x1.2'	35°

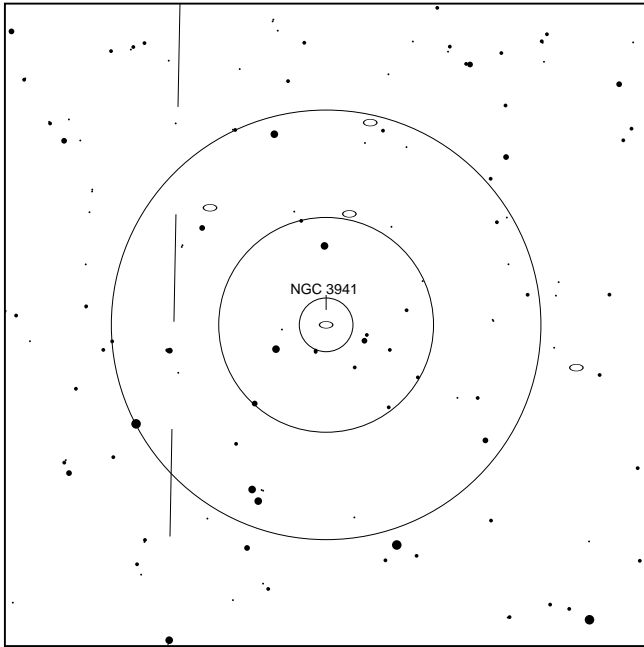
NGC 3877, H I 201, UGC 6745

A Herschel 400 Object

Elongated in PA 35 deg

U2000 chart: 74, **Tirion chart:** 6, **H-B Astroatlas:** B9, C12, D35. **NGC Description:** B, L, mE 37. **SAC DB Notes:** edge on spiral, 16' south from Chi UMA. **Burnham's:** p. 1933. **Luginbuhl & Skiff:** p. 249. **Deep Space CCD Atlas:** North p. 120.

Personal Notes:



NGC 3941

Type	R.A. (2000)	Dec	Mag.	Size	PA
E3	11h52.9m	+36°59'	11.3	3.6'x2.5'	10°

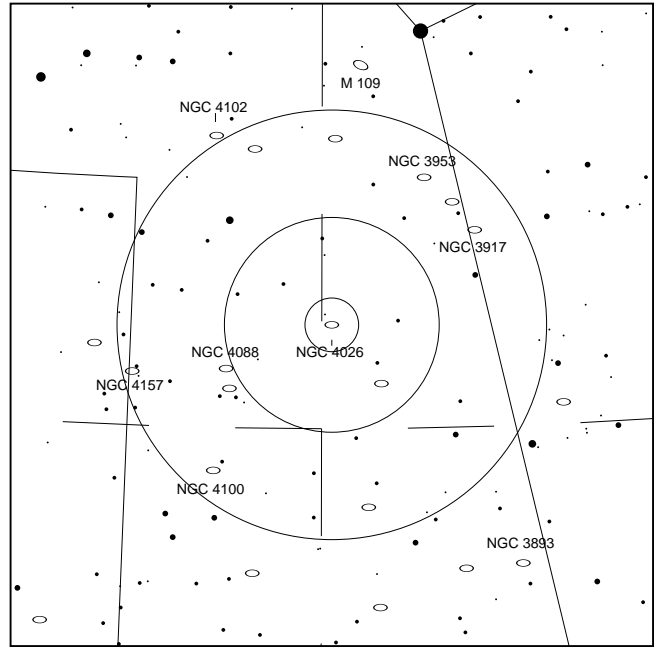
NGC 3941, H I 173, UGC 6857

A Herschel 400 Object

Small, bright

U2000 chart: 107, **Tirion chart:** 6, **H-B Astroatlas:** B9, C30. **NGC Description:** vB, pL, R, smbM *9. **Burnham's:** p. 1933. **Luginbuhl & Skiff:** p. 249. **Deep Space CCD Atlas:** North p. 121.

Personal Notes:



NGC 4026

Type	R.A. (2000)	Dec	Mag.	Size	PA
E8	11h59.4m	+50°58'	11.5	4.5'x1.1'	178°

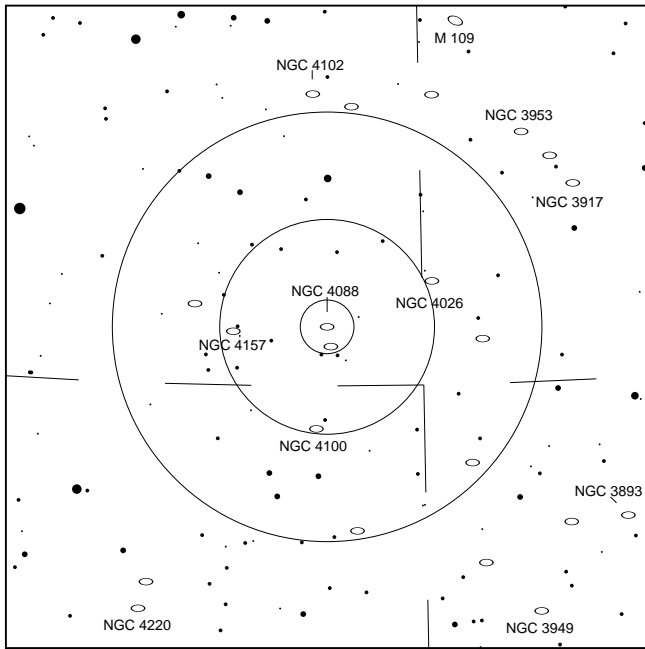
NGC 4026, H I 223, UGC 6985

A Herschel 400 Object

Lens-shaped

U2000 chart: 47, **Tirion chart:** 2, **H-B Astroatlas:** B2, C12, D35. **NGC Description:** vB, cL, mE176, vsvmbM, BN. **SAC DB Notes:** edge on lens shape. **Burnham's:** p. 1934. **Luginbuhl & Skiff:** p. 251. **Deep Space CCD Atlas:** North p. 123.

Personal Notes:



NGC 4088

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	12h05.6m	+50°33'	11.2	5.9'x2.2'	43°

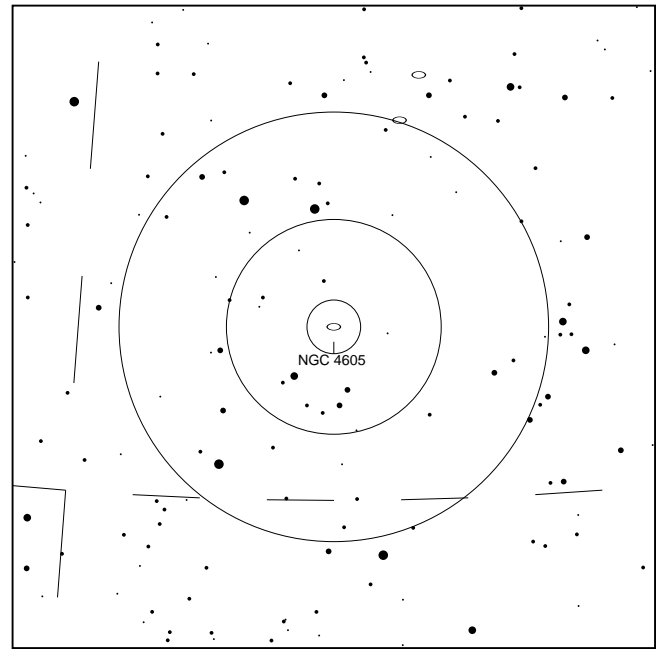
NGC 4088, H I 206, UGC 7081

A Herschel 400 Object

Near NGC 4085

U2000 chart: 47, **Tirion chart:** 2, **H-B Astroatlas:** B2, C12, D35. **NGC Description:** B, cL, E55, lbM. **SAC DB Notes:** P w NGC 4085 11' to south, distorted spiral arms. **Burnham's:** p. 1934. **Luginbuhl & Skiff:** p. 252. **Deep Space CCD Atlas:** North p. 124.

Personal Notes:



NGC 4605

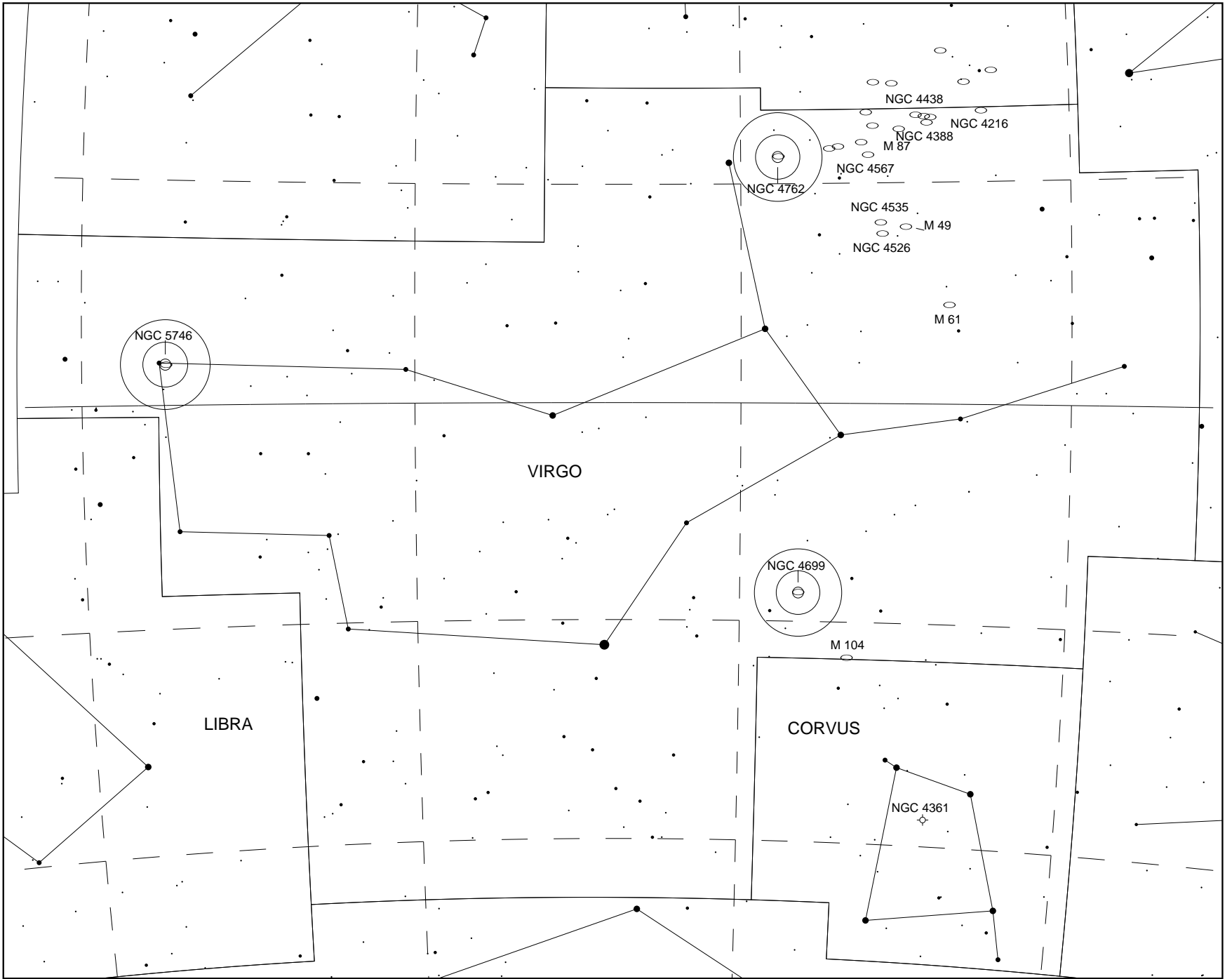
Type	R.A. (2000)	Dec	Mag.	Size	PA
Scp	12h40.0m	+61°37'	10.8	7.0'x2.5'	125°

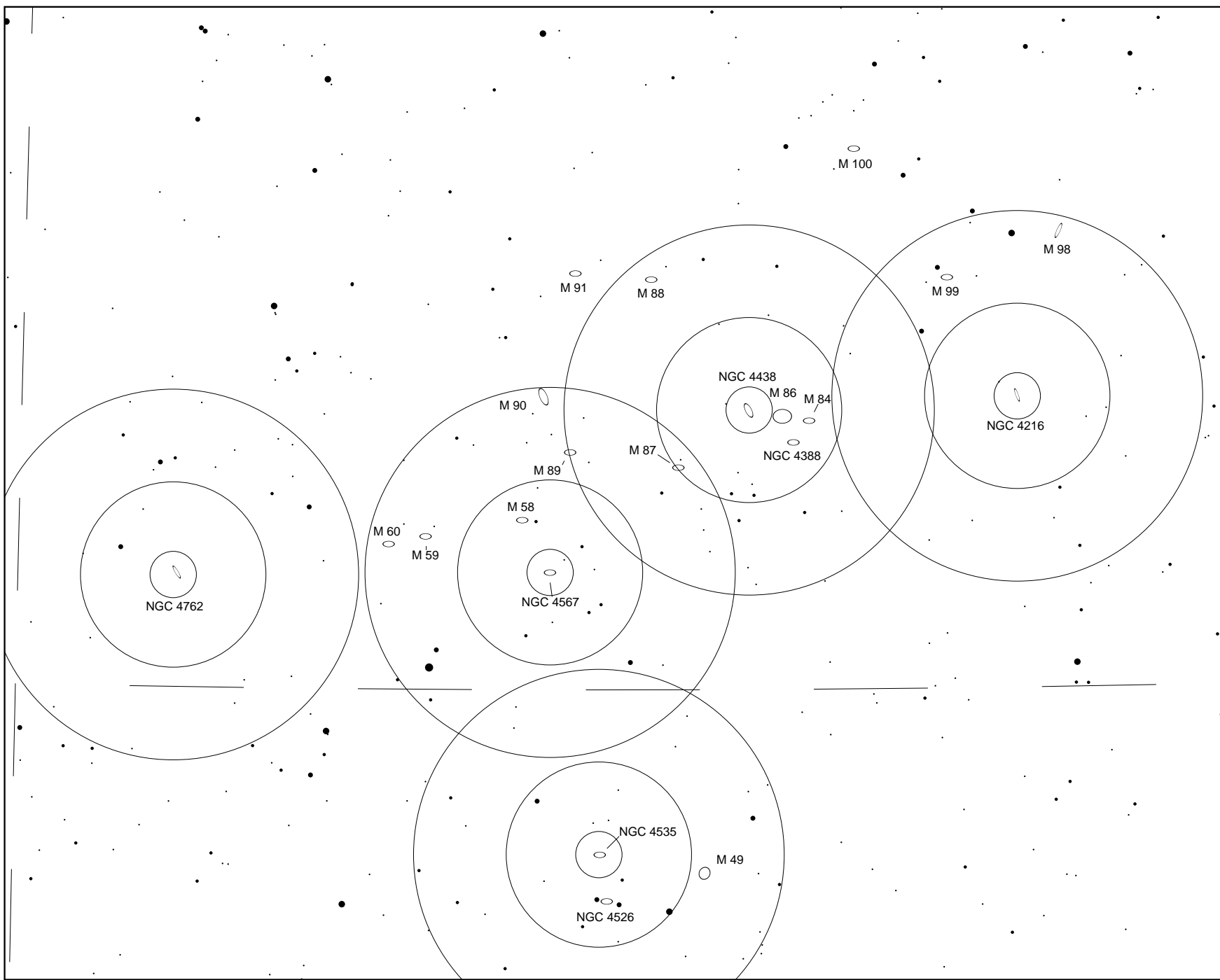
NGC 4605, H I 254, UGC 7831

Bright edge-on

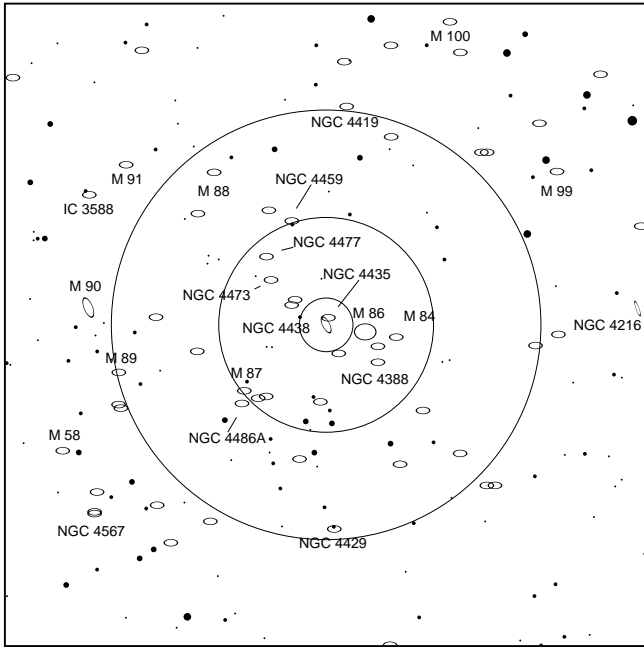
U2000 chart: 26, **Tirion chart:** 2, **H-B Astroatlas:** B1, C11. **NGC Description:** B, L, vmE118, glbM. **Burnham's:** p. 1935. **Luginbuhl & Skiff:** pp. 252-3. **Deep Space CCD Atlas:** North p. 141.

Personal Notes:





Virgo Galaxy Cluster



NGC 4438

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sap	12h27.8m	+13°01'	12	9.7'x3.9'	27°

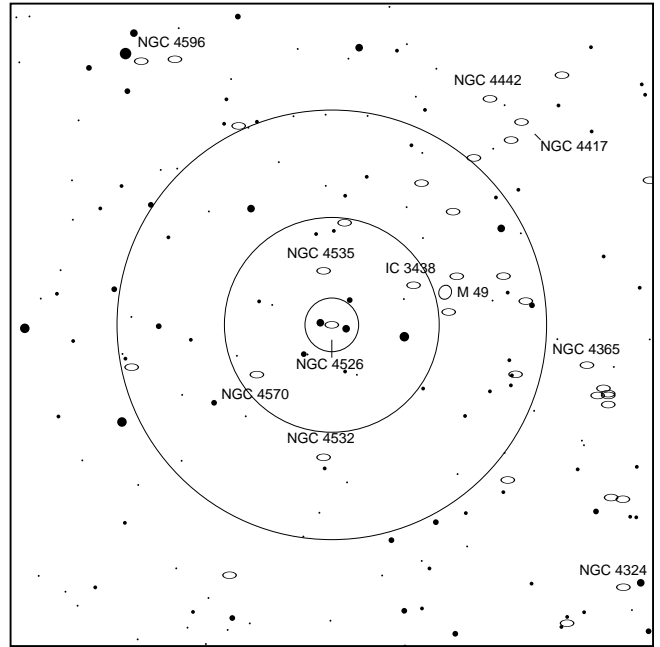
NGC 4438, H I 28, UGC 7574

A Herschel 400 Object

Pair with NGC 4435

U2000 chart: 193, **Tirion chart:** 13, **H-B Astroatlas:** B9, C48, D33, E10. **NGC Description:** B, cL, vLE, r, sf of 2. **SAC DB Notes:** Markarian's chain, NGC 4435 @ 4.4', long filaments. **Burnham's:** pp. 2053, 2074-86. **Luginbuhl & Skiff:** p. 265. **Deep Space CCD Atlas:** North p. 134. South p. 82.

Personal Notes:



NGC 4526

Type	R.A. (2000)	Dec	Mag.	Size	PA
E7	12h34.1m	+07°43'	10.6	7.0'x2.7'	113°

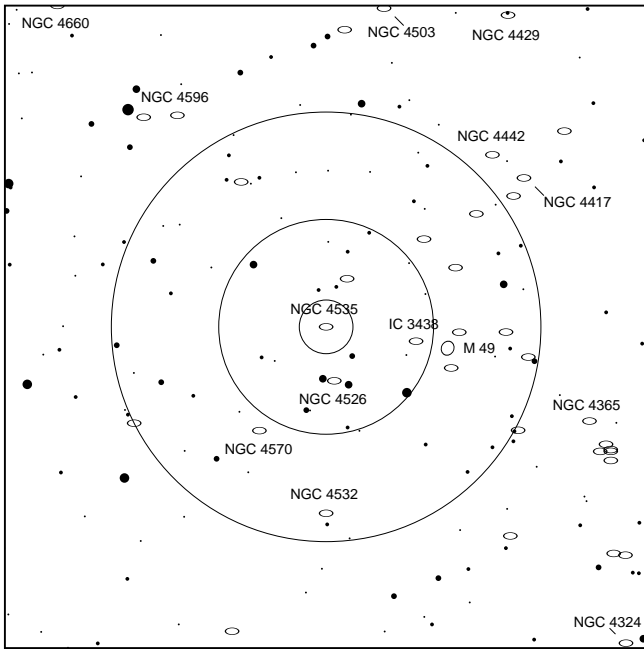
NGC 4526, H I 31, UGC 7718

A Herschel 400 Object

Between 2* of 7th mag

U2000 chart: 194, **Tirion chart:** 13, **H-B Astroatlas:** B9, C48, D33, E11. **NGC Description:** vB, vL, mE120, psmBM. **SAC DB Notes:** lenticular, between two 7th mag stars. **Burnham's:** pp. 2054, 2074-86. **Luginbuhl & Skiff:** p. 267. **Deep Space CCD Atlas:** North p. 138. South p. 83.

Personal Notes:



NGC 4535

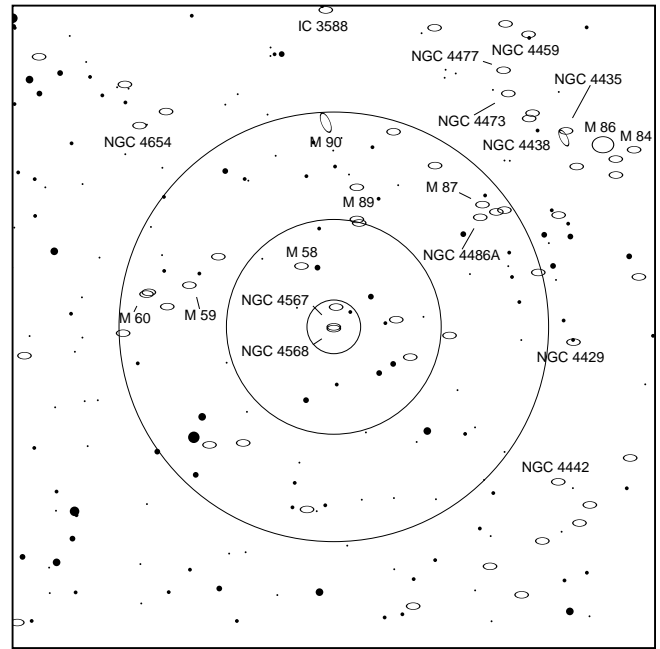
Type	R.A. (2000)	Dec	Mag.	Size	PA
SBc	12h34.4m	+08°13'	11.1	7.8'x7.0'	0°

NGC 4535, H II 500, UGC 7727

A Herschel 400 Object
Near M49

U2000 chart: 194, **Tirion chart:** 13, **H-B Astroatlas:** B9, C48, D33, E11. **NGC Description:** pF, vL, r, vseBN or *. **SAC DB Notes:** Ho 420b @ 5.0', S-shaped spiral. **Burnham's:** pp. 2054, 2074-86. **Luginbuhl & Skiff:** p. 267. **Deep Space CCD Atlas:** North p. 138. South p. 83.

Personal Notes:



NGC 4567/8

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	12h36.6m	+11°16'	12.5	3.0'x2.5'	85°
Sc	12h36.6m	+11°15'	12.5	5.1'x2.4'	23°

Siamese Twins

Galaxy pair

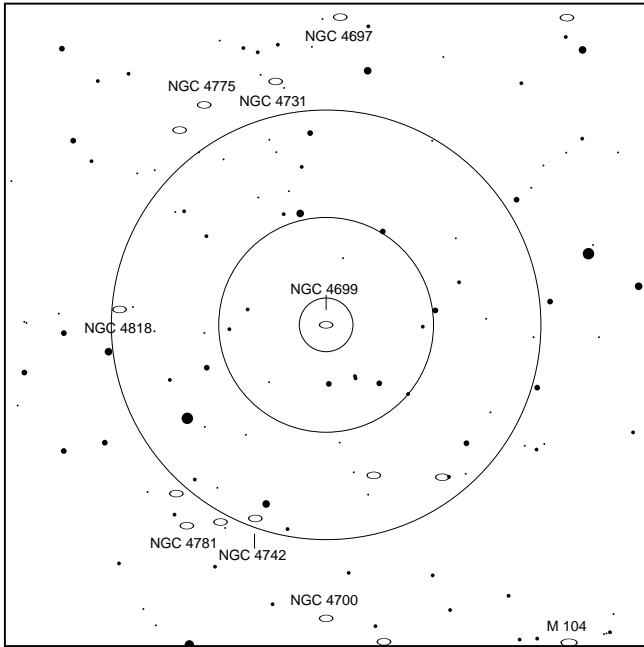
NGC 4567, H IV 8, UGC 7777

U2000 chart: 194, **Tirion chart:** 13, **H-B Astroatlas:** B9, C48, D33, E9. **NGC Description:** vF, L, np of Dneb. **SAC DB Notes:** NGC 4568 @ 1.2'. **Burnham's:** pp. 2055, 2074-86, 2082, 2088. **Luginbuhl & Skiff:** p. 267. **Deep Space CCD Atlas:** North p. 140.

NGC 4568, H IV 9, UGC 7776

U2000 chart: 194, **Tirion chart:** 13, **H-B Astroatlas:** B9, C48, D33, E9. **NGC Description:** vF, L, sf of Dneb. **SAC DB Notes:** NGC 4567 @ 1.2', overlaps 4567, Siamese Twins. **Burnham's:** pp. 2055, 2074-86, 2082, 2088. **Luginbuhl & Skiff:** p. 267. **Deep Space CCD Atlas:** North p. 140.

Personal Notes:



NGC 4699

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sa	12h49.1m	-08°40'	10.5	3.5'x2.7'	45°

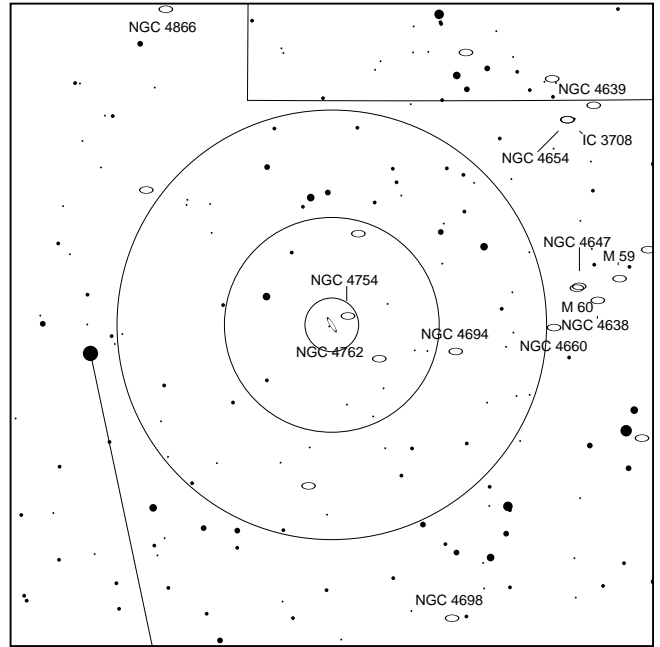
NGC 4699, H I 129, MCG-1-33-013

A Herschel 400 Object

Small & bright

U2000 chart: 284, **Tirion chart:** 13, **H-B AstroAtlas:** B10, C47, D31. **NGC Description:** vB, R, vmbMrN, r. **Burnham's:** pp. 2057, 2074-86. **Luginbuhl & Skiff:** p. 270-1. **Deep Space CCD Atlas:** North p. 144.

Personal Notes:



NGC 4762

Type	R.A. (2000)	Dec	Mag.	Size	PA
SO	12h53.0m	+11°14'	11.1	9.0'x2.0'	32°

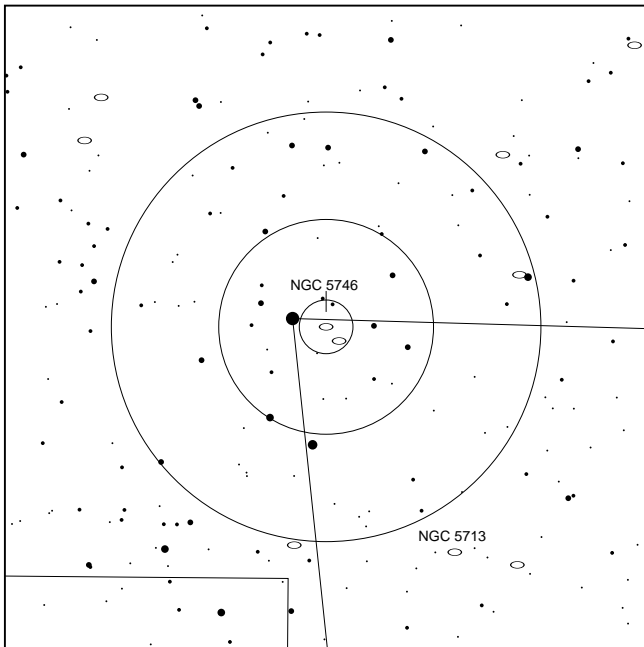
NGC 4762, H II 75, UGC 8016

A Herschel 400 Object

Flattest galaxy known

U2000 chart: 194, **Tirion chart:** 13, **H-B AstroAtlas:** B9, C47, D33. **NGC Description:** pB, vmE31, 3 B * s, f of 2. **SAC DB Notes:** NGC 4754 @ 10.5', thick streak w tufts at ends. **Burnham's:** pp. 2058, 2074-86. **Luginbuhl & Skiff:** p. 272. **Deep Space CCD Atlas:** North p. 146.

Personal Notes:



NGC 5746

Type	R.A. (2000)	Dec	Mag.	Size	PA
Sb	14h45.0m	+01°49'	12.3	7.4'x1.1'	170°

NGC 5746, H I 126, UGC 9499

A Herschel 400 Object

Edge-on, near* 109 VIR

U2000 chart: 243, **Tirion chart:** 14, **H-B Astroatlas:** B7, C46. **NGC Description:** B, L, vmE170, bM, BN. **SAC DB Notes:** vsBN in B cent. bulge, NGC 5740 at 18', edge on. **Burnham's:** p. 2063. **Luginbuhl & Skiff:** p. 279-80. **Deep Space CCD Atlas:** North p. 160. South p. 97.

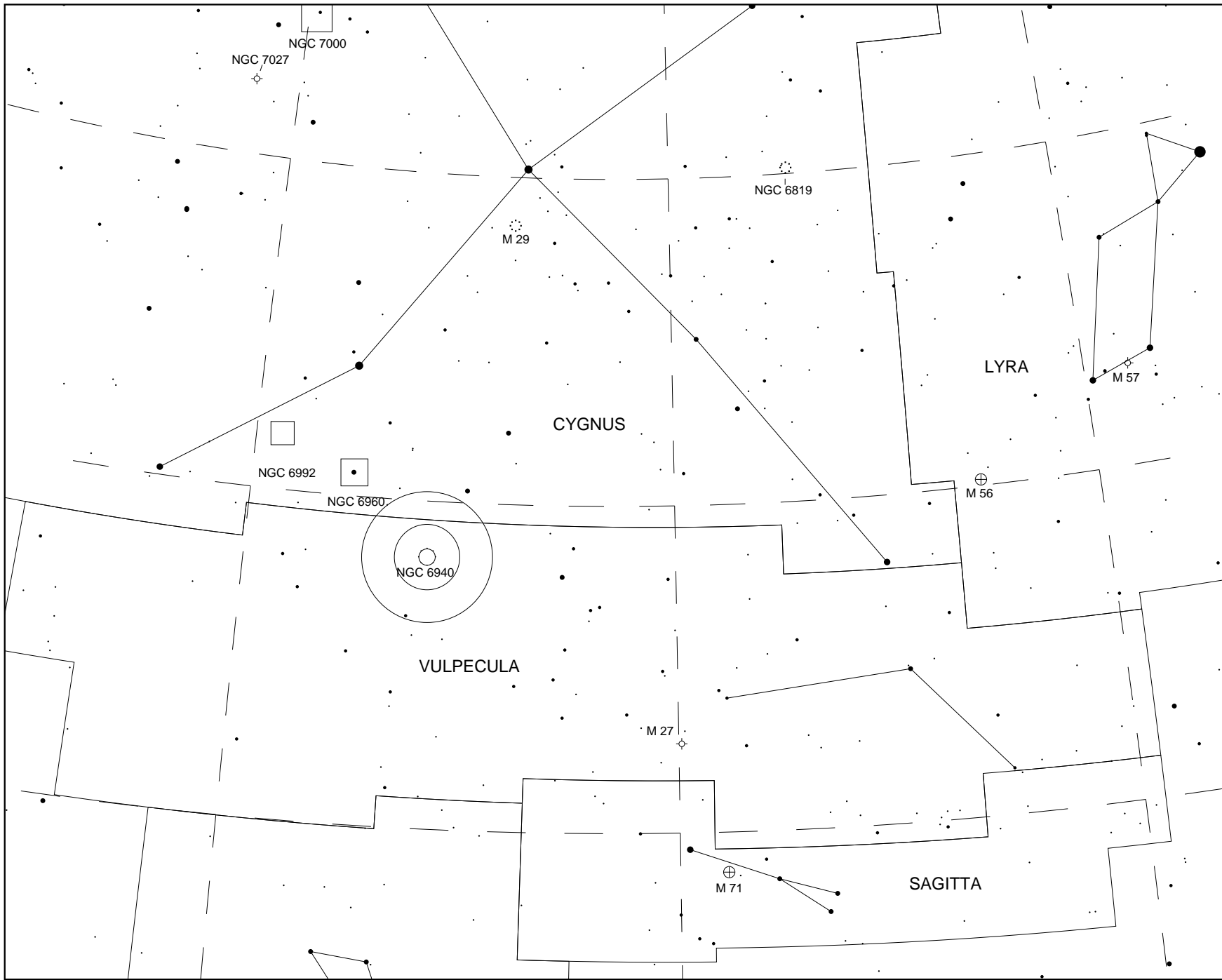
Personal Notes:

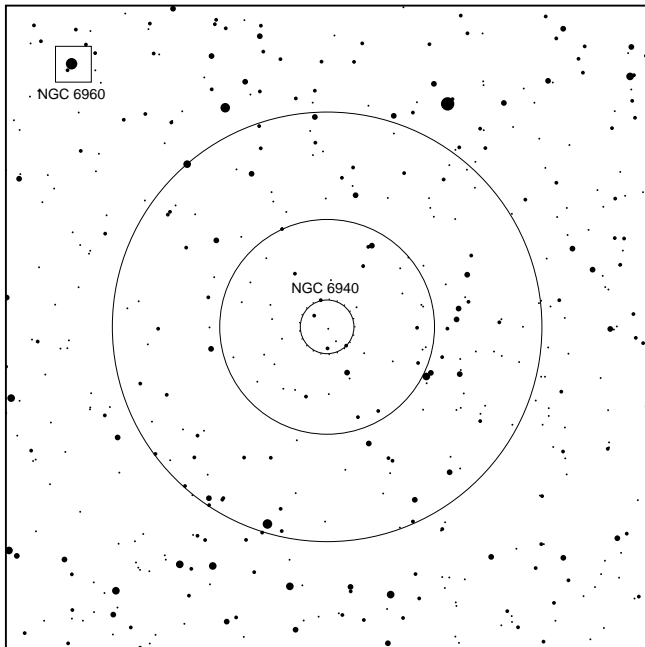
DIM MOMENTS
IN
**AMATEUR
ASTRONOMY**

by Paul Dickson

SPENDING
10 MINUTES
GALAXY
HOPPING IN
VIRGO

...ONLY TO
BUMP
THE
TELESCOPE





NGC 6940

Type	R.A. (2000)	Dec	Mag.	Size
OC	20h34.6m	+28°18'	6.3	31.0'

NGC 6940, H VII 8

A Herschel 400 Object

Rich, 60*

U2000 chart: 120, **Tirion chart:** 9, **H-B Astroatlas:** B5, C24. **NGC Description:** Cl, vB, vL, vRi, cC. **SAC DB Notes:** 100 * mags 9... **Burnham's:** pp. 2115, 2116. **Luginbuhl & Skiff:** p. 284. **Deep Space CCD Atlas:** North p. 226.

Personal Notes:

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PK43+37.1	64
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PK120+9.1	40
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PK196-10.1	85
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DIM MOMENTS
IN
**AMATEUR
ASTRONOMY**
by Paul Dickson

LOOKING FOR
A 13TH
MAGNITUDE
GALAXY

WITH
HAND HELD
BINOCULARS